The Morison Lectures
ON
THE NEW PSYCHIATRY.

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ABSTRACT OF LECTURE II.[1]

(Delivered on March 10th.)

PSYCHO-ANALYSIS.

MR. PRESIDENT AND GENTLEMEN,—Psycho-analysis is a method of obtaining a complete history of the patient's illness and an insight into his modes of thought, such as can be obtained in no other way. A detailed history of a mental disorder includes an account, not only of the manifest disturbances of conduct, but also of the patient's thoughts in association therewith and of the various experiences and events which led up to it, together with their bearings on one another from the patient's point of view. When all this has been ascertained it becomes necessary to trace the patient's particular habits of thought back to their origin. Psycho-analysis achieves this result by reviving his memory for numerous incidents and events which he had forgotten, and by unearthing his hidden, repressed, and therefore unconscious, complexes. The relationship of these with the present disease is then discussed in such a way as to place these complexes in their true light, this being in reality a kind of re-education whereby the patient acquires self-realisation and develops his character and personality.

It is a duty for every physician who contemplates using the method either to be psycho-analysed or to psycho-analyse himself, so that he shall not read his own complexes into his patients. The process is not easy, even for those who have far greater experience of the method than I have, and it takes a very great deal of time. It is customary to spend with each patient an hour a day five times a week. It then takes a fortnight to obtain a complete history and a clear insight into the nature of the case and at least three months to accomplish a cure. Most cases take longer than this, and even Freud himself, purposely selecting very difficult cases, has spent as much as three years over a single patient before he effected recovery.

CASES SUITABLE FOR PSYCHO-ANALYTIC TREATMENT.

"What patients are suitable for psycho-analysis?" The patient must be intelligent. He must have some pretence to education, and I do not recommend the employment of this method with the labouring classes, although successful analyses have been reported. Similarly it is not wise, at any rate for a beginner, to attempt the analysis of young children, as it requires very special tact.

Also the patient must be willing to coöperate with you. You cannot analyse a patient who does not wish it. It is true that it is quite possible to learn much about his complexes by conversation and critical observation, but you will be unable to reveal them satisfactorily to himself. Then there is the type of patient who proclaims that he is perfectly willing to be analysed, but when the work has well begun he does not take it seriously and plays his part in a desultory way. Such patients flit from one doctor to another, always dissatisfied with the last, and expect to be cured without making any effort themselves. All such patients should be left severely alone. Lastly, it is practically useless to attempt psycho-analysis on a patient who has passed middle age. At best, the analysis of a person who has passed his fiftieth year is sure to be lengthy.

In order to render clear what classes of mental disorder are suitable for analysis let me first explain how I classify them.

1. *The Neuroses.*—Neurasthenia, the anxiety neurosis, some forms of hypochondriasis.
2. *The Psychoneuroses.*—Hysteria, the compulsion neurosis, obsessions, morbid fears.
3. *The Psychoses.*—Maniacal depressive insanity, dementia præcox, paranoia.
4. *Confusional Insanities.*—Exhaustion insanities (from overwork, worry and mental shock), infection insanities (including febrile and post-febrile delirium), toxic insanities (from alcohol, haschish, belladonna).
5. *Thyroigenous Insanities.*—Myxœdema, exophthalmic goitre, cachexia strumipriva, cretinism.
6. *Epileptic Insanities.*
7. *Organic Insanities.*—From cerebral thrombosis, tumour, aneurysm or abscess, acute and chronic meningitis, general paralysis, Huntington's chorea.
8. *Chronic Cortical Atrophy.*—Insanities of involution (abiotrophic), arteriopathic dementia (syphilitic, senile, and renal).
9. *Congenital Mental Defect (Amentia).*—Idiocy, imbecility, backward children, and so on.

[Here Dr. Stoddart gave his reasons for considering the last six groups unsuited for treatment, save certain forms of epilepsy and alcoholism, while the first three groups were all of interest to the medical psychologist. He proceeded, reversing the order:]

Maniacal-depressive insanity is a psychosis characterised by attacks of mania and melancholia, and it may be taken as a general rule that no attempt should be made to analyse these patients during the course of one of their attacks. A maniacal patient is in too excited a condition to coöperate, and psycho-analysis during an attack of melancholia tends to make the patient worse. The analysis should be undertaken between the attacks, and many medical psychologists have come to the conclusion that the analysis should not be pushed too far. A partial analysis of a few hours laying bare the most obvious of the patient's repressed complexes, which are very near the surface, is often sufficient to effect a permanent recovery; whereas anything like a complete Freudian analysis only does harm. Some of the most experienced psycho-analysts, however, disagree with me on this point. I ought to say that the psycho-analyst may often obtain a hint as to the nature of these complexes by a careful study of the patient's conduct, delusions, and apparently incoherent remarks during an attack; but the analysis itself should be postponed until the attack is over. Most of the cases of dementia præcox are too inaccessible mentally, while some of the earlier cases are too accessible, by which I mean that within a week of starting the analysis the patient has flooded you with an enormous tangle of repressed sexual complexes out of which there seems to be no possibility of escape. The most favourable cases are those of katatonia. I must warn the beginner against cases of dementia paranoides for his own sake. Negative transference, which I explain later, is liable to be set up and may induce the patient to inflict actual bodily injury upon his doctor, which may go as far as murder.

[1] Lecture I. was published in THE LANCET of March 20th, p. 583.

The same state of affairs may arise in the analysis of cases of paranoia, where we also encounter the difficulty that the patient suffers from a systematised delusional state on which he bases his whole attitude to the outside world, and refuses to believe that there is anything amiss with his mentation.

In Class 2 we come to the cases in which psycho-analytic treatment is pre-eminently satisfactory, though hysterical patients can be cured by other means. For psychasthenia, however, imperative ideas, obsessions, morbid fears, irrepressible thoughts and morbid impulses there is no other treatment than psycho-analysis, which is remarkably efficient and satisfactory. But, of course, no psycho-analyst claims that his method is infallible, even in cases of hysteria and psychasthenia.

The disorders of Class 1 are also suitable for psycho-analysis, but it is soon found that a complete psycho-analysis is unnecessary because the cause of the trouble is readily found and appropriate advice can be given accordingly. I shall refer to such matters in my next lecture.

TECHNIQUE.

[Dr. Stoddart next considered the technique, warning his hearers that the method made great demands on the doctor's time and sometimes on the patient's purse.]

The patient is first systematically examined and a provisional diagnosis made. All defects in physical health are remedied, such as errors of refraction, carious teeth, sources of septic infection, nasal obstructions, and so forth. When it has been decided that the patient is a suitable case for psycho-analysis he is directed to sit in a comfortable armchair by the consulting-room table more or less facing the doctor. This is my own method, but some physicians arrange that the patient shall face another way, so as not to be distracted by his examiner's changes of expression. Freud himself recommends that the patient lie on a comfortable couch and that the physician sit at the head of it so that the patient cannot see his face. Many physicians begin with an association experiment with the use of a galvanometer, sphygmograph, and stethograph, but in an ordinary patient all these instruments are mere accessories. A list of quite ordinary words, usually about a hundred, is read one by one to the patient. These are known as "stimulus words," and the patient is required to react to each in succession by stating the first word that comes to his mind in association with the stimulus word. The physician works with a stop-watch, and the patient is required to react as quickly as possible; a normal reaction takes about two seconds. Opposite each stimulus word the psycho-analyst writes the "reaction word" and the time taken by the reaction. I append here a list of suitable words, but it is as well for the doctor to introduce here and there words which appear to have some bearing upon the patient's own malady.

Quiet	Law	Correct	To play	Despise
Wall	Trouble	Pencil	Threaten	Tooth
Journey	Whisky	Woods	Habit	Book
Bible	Justice	Yellow	Dance	Wild
Apple	Work	Dream	Afraid	Box
Salt	Lion	Insolent	Child	Thirsty
Tobacco	Hammer	Ride	Sing	Hard
Cottage	Crowd	Soldier	Frog	Moon
Love	Paint	Thief	Proud	Glass
Sorrow	Rent	Green	Wool	Sympathy
Sheep	Ring	Joy	Doctor	Street
Water	To listen	Quarrel	Brother	Harm
False	Kiss	Choose	Men	To tell
Wash	Policeman	Deep	Health	Boy
Rich	Soft	Mouth	Mountain	Table
Dark	Stork	Anxiety	Rough	Duty
Window	Luck	Friend	Bed	Ink
Wish	Foot	Smooth	Girl	Carpet
Dog	Change	Dirty	Blood	Knee

These words are read through a second time and the associations again noted, but it is not necessary to record the reaction time on repetition.

The physician now searches his results for what are known as "complex-indicators." These are: (1) Undue prolongation of the reaction time—4 seconds or more; (2) failure to react to a word; (3) strange and incoherent associations; (4) apparent contradictions; (5) perturbation of several reactions following a certain association; (6) failure to react with the same word on repetition of the test; (7) accompanying motor and vaso-motor phenomena, such as restlessness, lip-biting, nail-picking, blushing, &c.; (8) increase of frequency of the pulse and respiration; and (9) the generation of weak electrical currents by the body, or, if a cell is introduced into the circuit, alteration of the electrical resistance of the body. By a little detective work it is often possible to make a shrewd guess at some of the patient's repressed complexes; but your own conclusions should never be communicated to the patient. It is legitimate to ask him a question which forces him to admit something that he is obviously withholding, but it is not permissible to do more than this.

The various "complex-indicators" just mentioned are due to intrapsychic "resistances." Some of these are between the preconscious and the conscious, and constitute resistance to a disclosure of the complex *to you*. Others are between the unconscious and the preconscious, and constitute a resistance to disclosing an unconscious complex to the patient's own consciousness, and incidentally to you. These "resistances" have to be overcome, and the method is to take each of the associations which have revealed themselves as complex-indicators and get the patient to explain them. This he can very readily do with many of his associations by relating some incident in his past experience. Some will prove valueless and be discarded, others worth noting. Some of his associations, however, will turn out to be a puzzle to himself. These are important and should be followed up. What is called "continuous association" may first be tried, the patient being told not to stop at the first association, but go on from one word to another until some light is thrown on the first association; or the particular reaction may be used as a starting point for a "free association" to be described presently. If during a series of continuous associations the patient comes to a stop, a block, a resistance, he should be urged to find an association. You say to him, for example, "Go on, you must think of something!" Then, after a short pause, especially when he shows some motor restlessness, "What is in your mind now? You must tell me." In this way you work through all the reactions and by the end of the test you have a very fair amount of material to work upon.

Free Association: Overcoming Resistances.

The method of "free association" is conducted in much the same way, except that no stimulus words are given. The patient is directed to make himself quite comfortable and to assume a passive, inert frame of mind. He is then told to allow his thoughts to flow as they will, and to exercise no control of them whatever. As they flow in this way he is to speak everything that comes to his mind; no matter how incoherent his speech may seem and no matter how painful or repugnant the thought may be, he must speak it out. He is to allow his thought and speech to run wild. In this way his associations will here and there tap the unconscious. After a few sittings you can sometimes tap the

unconscious almost as soon as he enters the consulting room by making some utterance which calls for no special reply, such as "Yes?" or "Well?" and waiting for him to speak. It may seem ungracious or unceremonious that you should not enter into the conversation, but you must let him do all the talking.

In the course of a free association you will again come across "resistances." The patient will tell you that his mind is a blank and that he can think of nothing. You reply, "Never mind! go on talking." Or he will become silent. Your reply is to become silent too. You wait for seven or eight minutes sometimes, looking at him expectantly the whole time until something comes up from the unconscious; or you interrupt the silence suddenly with "Talk! what is the matter with you? Go on talking!" or, at the slightest sign of restlessness, you say, "What are you thinking of now? Why don't you tell me?" These resistances are difficult to describe because they vary so much with different patients. I have seen a patient fall over the side of the chair, as if collapsed, remarking "Oh doctor! what are you doing to me?" a patient, mind you, who went about his business during the rest of the day as if there were nothing the matter with him, although he was constantly tormented by psychomotor hallucinations and other symptoms.

From time to time it is well to recapitulate to the patient what he has told you and get him to draw his own conclusions as to the nature and cause of his malady. I wish to insist a little on this point, that he tells you and that you do not tell him, because the critics like to say that the psycho-analyst puts suggestions into the patient's mind. It is true that the patient will sometimes ask, "Is that right, doctor?" to which my usual reply is, "Of course it is right, because it is your mind that has come to this conclusion, not mine, and the malady is yours, not mine." Sometimes, of course, it is necessary to counteract some absurd conclusion, but I have found that such conclusions usually originate in a suggestion given to the patient by another person. Beginners in psycho-analysis are liable to make this very mistake. They tell the patient their conclusions as to the nature of his complexes before he has discovered them for himself. These are what Freud has termed the "wild psycho-analysts." Sometimes their conclusions are correct, sometimes incorrect. One patient of mine told me that a certain doctor after one week's analysis informed him that he was in love with his mother, to which, not understanding what was meant, he replied, "Of course I'm in love with my mother." Now it happens that the doctor was right; the patient's libido was unconsciously fixated on his mother, so much so that although the patient was 40 years of age and had been in love many times, he could never bring himself to marry the girl of his choice. Psycho-analysis, as a method of bringing hidden complexes to light, has been compared to opening an abscess; but this doctor's method was more like hitting an abscess, not opening it.

I can here foresee an objection that there is no need for the psychologist if he is not allowed to supply interpretations of the patient's data or even to engage in conversation, and I have indeed had the experience of a patient who, while admitting her recovery, remarked, "But I do not see what you have done." I accepted that as a very great compliment.

As a matter of fact, the work of the psychologist is at times very great at overcoming resistances, which sometimes last for several sittings. One form of resistance for which you must be on the watch is what the Germans call "vorbeireden"—as we should say, "talking past the point." The patient suddenly becomes loquacious and hurries past a certain association, just as a hostess at a dinner-party may suddenly become talkative and change the conversation, knowing that it is getting dangerously near a tender subject for one of her guests. The analyst's duty is the reverse of this. He brings his patient back to the point, discusses it right out, and perhaps starts a new series of associations. Then again it is desirable to encourage associations which promise to revive infantile memories. Such memories are usually strongly visual and difficult to associate with words; it is therefore well on such occasions to ask the patient to close his eyes, to see pictures and to relate what he sees. Indeed, it is helpful in all psycho-analysis that the patient should keep his eyes closed. His mental and bodily attitude should resemble that of going to sleep, in that the mind should be allowed to wander, but there is the difference that the subject's attention is directed to his own psychical activities. Of course, he requires a certain amount of practice before he is able to do this successfully. His part of the work is by no means easy, and many a patient attains peace of mind at the expense of his hair turning grey; not as a result of the difficulty of technique, but as a result of overcoming resistances.

SIGNIFICANCE OF VARIOUS INCIDENTS AND HABITS.

[Dr. Stoddart here considered the interpretation of dreams, which Freud has designated the "royal road" to the unconscious, and which he considered very helpful in psycho-analysis, adding that many suggestions from apparently trifling incidents and habits occurring in the patient's everyday life will also be found valuable. He proceeded:]

A common experience of psycho-analysts is that patients leave some of their belongings after a satisfactory interview. This is an unconscious way of expressing a wish to return for further treatment. People who have displayed a tendency during childhood to pilfer or lie and who still have an unconscious tendency in the same direction, are scrupulously careful to pay for everything "on the nail," as the saying is, or to be excessively precise and truthful whenever they make a statement. A spendthrift usually has all the apparatus for saving money—cash-box, ledger, day-book, and the rest of it—but his unconscious tendency prevents him from using them. These are generalities, but patients and others often supply particular examples of the work of the unconscious. Dr. Bernard Hart quotes a patient, for example, who had an irresistible impulse to examine the number of every bank note which came into her hands. Analysis revealed that this habit dated from an association when she asked a man with whom she was in love to change a coin for her. He complied with her wish, and putting the coin in his pocket said that he would not part with it. This remark raised her hopes that her love was reciprocated and any money passing through her hands always reminded her of the incident. The man passed out of her life, however, and she strove to banish the episode from her memory and to forget that such a desire ever crossed her mind. The repression was successful and the complex was thenceforward only allowed to enter consciousness in disguise—viz., as an interest in money—which became crystallised into her exaggerated pre-occupation with the numbers of bank notes.

Freud has demonstrated that the forgetting of proper names, far from being fortuitous, is always due to the activity of the intrapsychic censor. Whenever a name is forgotten or incorrectly remembered a reason can always be discovered, usually by a quite superficial analysis, why it has been forgotten. Some disagreeable memory is the common cause, associated either with the individual or with a person or place of the same or a similar sounding name. In other words, the forgetting is neither more nor less than a repression. Examples of this occur in everybody's experience every day. I always have a difficulty in remembering the name of a certain town in Italy, Ferrara, where—owing to a piece of foolishness—I had to run for nearly a mile in record time (for me) in order to catch a train in which I had already placed my luggage. The forgetting of resolutions belongs to the same category of unconscious phenomena, the commonest example being that we are more liable to forget having borrowed money than having lent it, although none of us would admit to ourselves that we have dishonest propensities.

The mislaying of objects gives another series of clues to the unconscious. Bills are more apt to be mislaid than cheques. If a cheque is mislaid, you will find that you have a feeling that you have not given sufficient value for the money or that you have failed to declare it to the income-tax authorities, or that you do not like the person who gave it to you, or there is some other unpleasant association with the cheque. Mistakes in speaking, reading, and writing (*lapsus linguæ et calami*) belong to the same category. They are betrayals of repressed complexes, and no psycho-analyst allows such a mistake made by himself to pass without searching for the hidden cause of it. Similarly, he always gets his patients to relate to him such symbolic actions, failures of memory, and lapses of the tongue and pen, so that he may investigate them and thus gain access to the unconscious tendencies of his patients.

Perhaps I ought to mention two other methods of tapping the unconscious, which do not, however, belong to psycho-analysis proper—viz., Hypnosis and Crystal-gazing. I prefer if a person is to be psycho-analysed that he should not be hypnotised. Crystal-gazing does not require much practice and is quite easy for a neurotic patient. He is directed to abstract his mind from all normal sensory impressions and to gaze intently into a glass sphere. A black background is preferable, and it is advisable not to have too much illumination. Clouds appear in the ball at first, which advance and retire synchronously with respiration. Then many reflections are unconsciously combined to form an illusory picture, which is at first vague and indistinct. Definite hallucinations then form which ultimately take on movement. These hallucinations represent some forgotten incident of the past life of the individual, with much less distortion than takes place in dreams. The percipient, being detached from surrounding impressions and awake to those of his own sub-conscious self, is probably in a mild state of hypnosis. The patient relates to the physician all that he sees in the crystal ball, and, the memory of some incident having been revived, he is urged to connect it with his present content of consciousness by the association methods already described. The method is not much used, but I have sometimes found it helpful in overcoming resistances in the interpretation of dreams.

THE TRANSFERENCE.

In the first lecture I explained that every constellation of ideas which we call a "complex" is possessed of a certain amount of psychical energy or libido, desire *plus* a conative trend; and it is this libido which usually conflicts with the herd instinct and brings about that mental conflict which secures adjustment by repression of the whole complex into the unconscious. Fixation of the libido in the unconscious may be on the father (Œdipus-complex), on the mother (Electra-complex), on a person of the same sex as the patient (homosexual-complex), on a person of the opposite sex who has passed out of the patient's life, or even on an inanimate object (money, for example). When, therefore, by the methods I have described an unconscious complex becomes conscious, this libido becomes conscious too, but this time its object is not available. The method of psycho-analysis has itself divorced the libido from its former object. There is therefore a certain amount of libido, synonymously psychical energy, floating free, so to speak. What becomes of it? Such a state of affairs cannot possibly persist. It becomes attached to, or fixated on, the personality of the physician. This is a stage which must be attained by every patient and is known as "the transference." To some extent a similar feeling of dependence and confidence occurs in every patient, whether he be suffering from heart disease, phthisis, cancer, or any other organic disease; but it is enormously exaggerated in the neuropath who is undergoing treatment.

All Psycho-analysis Proceeds viâ Transference.

Psycho-analysis means using transference for the purposes of treatment, it being the only way in which buried memories can be recovered. It is often difficult to see how on earth certain infantile fixated relationships can possibly be transferred to the physician, but the patient's unconscious mind discovers a way, usually with the help of a dream. When, as commonly happens, the infantile fixation is of a hostile nature the patient's unconscious mind is most insulting to the physician, although superficially he is as polite as ever. Under such conditions, when the transference has been effected, it may be very disagreeable, and indeed dangerous. In patients suffering from delusions of persecution, for example, the patient then regards the physician as his persecutor. Jung of Zürich told me of a patient of his who presented him on recovery with a loaded pistol which, during the stage of transference, was intended to be levelled at him. This is known as "negative transference." It must never be forgotten that during the transference the neurosis is as active as ever. There is a recrudescence of many of the symptoms of the former neurosis with the difference that some earlier person is replaced by the person of the physician. A similar transference on the part of the physician has to be guarded against ("reversed transference" it is called) and is to be avoided by self-analysis.

It is the commonest complaint of neurotic patients that they are not understood, but in the psycho-analyst they have found a man who listens sympathetically, tries to understand them and never gets annoyed by their constantly recurring resistances. The doctor has become a kind of father confessor who has penetrated the secrets of his soul far deeper than any father confessor ever does, while the patient has found a prop against which he may lean for evermore. He considers the

situation ideal, and resists all attempts to alter it, even reverting to all his former phantasies in their new relationship. This is the state in which the father confessor would leave him, but the psycho-analyst must place the patient upon his own feet. In other words, the next stage in the treatment is dissolution of the transference relation. This is the most difficult part of psycho-analysis, because the resistances are as strong as ever. It is to be accomplished in exactly the same way in which the transference relation was produced—viz., by psycho-analysis. In this dream interpretation will again play an important part, for it will now prove a useful guide in our search for the future object of the libido. We must find new interests for the patient and encourage him in them, so that he may come once more into practical relationship with the world around him. During this process all his symptoms crumble away, and in the end he finds himself neither better nor worse than other members of the community around him, but just a normal person.

TYPHOID AND PARATYPHOID INFECTION.*

No. II.—THE DETECTION AND IDENTIFICATION OF B. TYPHOSUS AND B. PARATYPHOSUS.†

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THE problem of the detection of the B. typhosus and the paratyphoid bacilli resolves itself into a question of the application of methods which will reveal the presence of these organisms in mixed cultures of a variety of bacteria even when their relative numbers are very few; as, for example, in the fæces of convalescents or carriers. Where typhoid (or paratyphoid) bacilli are abundant almost any method, from plating high dilutions over large surfaces of ordinary agar to the use of the most elaborate media for the enhancement of the B. typhosus on the one hand, or the inhibition or elimination of its rivals on the other, will render the isolation of these organisms a comparatively simple process. But where they are few negative results are frequently obtained even after repeated examinations of the fæces.

In bringing forward the results described below it is not our object to enter into any detailed criticism of existing methods, many of which have been shown to possess very considerable value for particular purposes. A discussion of their respective merits and demerits does not lie within the scope of our present purpose, which is to point out briefly why negative results obtained by their use are often likely to be entirely misleading where relatively few of the bacilli are present. At the same time we wish to describe a new method of which the essential feature is an exposure of the suspected bacterial material to the influence of actinic light. This method allows of the examination of much larger quantities than usual of the material in question with very little labour, and has enabled us to detect the B. typhosus or B. paratyphosus at the first examination where examination by other methods had again and again yielded negative results. For example, from a suspected carrier examined elsewhere on five different occasions with negative results, we isolated a few colonies of the B. typhosus at the first examination by the new method, though other methods tried at the same time gave a negative result.

Inhibitory Media.

In examining suspected carriers and in studying the persistence of typhoid and paratyphoid bacilli in the urine and fæces of convalescents from typhoid and paratyphoid fever, we have met with constant disappointment in the results obtained by using the various special media which have been recommended for the purpose. With most of these media the amount of the suspected material which can be worked up for investigation is relatively very small unless the number of platings made is largely increased. Any considerable multiplication of platings is, however, impossible when many examinations have to be carried out within a short period. Thus if only relatively few of the bacilli are present in the material examined they are likely to be missed.

But besides this difficulty, the rate at which typhoid and paratyphoid bacilli frequently appear to vanish during convalescence from fæces which are investigated by these methods forced upon us a suspicion of the possibility that the eliminating substances employed were actually destroying the bacilli sought for as well as those which it was intended to inhibit.

In view of the importance at the present time of retaining convalescent soldiers under observation and control until they cease to act as carriers it is essential that the method used in making examinations should be one in which a negative finding represents as nearly as possible a true negative. And an ideal method would be one where the report "not found" could be accepted as a true equivalent of "not present." But this can never be the case if the media employed are such as may destroy or inhibit the bacilli which are being sought for.

That the method of direct plating on so-called selective media often proves misleading has been shown by various observers, and notably C. H. Browning[1] and his co-workers who found in the course of their important work with brilliant green that direct plating on MacConkey's medium was unsatisfactory. It only enabled them to detect typhoid (or paratyphoid) bacilli in 6 cases out of 13, in all of which they were discovered by their method of "enhancement." Even in this latter method, however, as well as in its later modification by the addition of potassium tellurate[2] to the fluid used for the primary cultures plating on a special medium follows the enhancement. Accordingly we found it necessary to submit a series of the recognised selective media to actual tests as regards their effect upon the growth of different members of the coli-typhoid group.

Among the numerous special media which have been proposed the best known are those

* The expenses of this work have been defrayed out of a grant received from the National Medical Research Committee.
† THE LANCET, Feb. 13th, 1915, p. 324.

1 C. H. Browning, W. Gilmour, and T. J. Mackie: Journal of Hygiene, vol. xiii., p. 335; Journal of Pathology and Bacteriology, vol. xviii., pp. 144, 146.
2 C. H. Browning, T. J. Mackie, and J. F. Smith: Journal of Pathology and Bacteriology, vol. xix., p. 127.

of Drigalski and Conradi,[3] MacConkey,[4] Endo,[5] Lentz and Tietz,[6] Löffler,[7] Conradi,[8] and Fawcus.[9] Of these media those of Drigalski and Conradi, MacConkey, and Endo were ultimately selected for special quantitative investigation. A very extensive series of experiments has been carried out; but it will be sufficient for our purpose to quote a few typical examples of the results obtained on these media with pure cultures, and with mixtures of pure cultures of B. typhosus and B. coli in different proportions. The paratyphoid bacilli have also been investigated in a similar manner. Experiments were made by preparing (*a*) high dilutions of pure cultures of B. typhosus and B. coli and (*b*) known mixtures of these pure cultures, and comparing the number of colonies of the two organisms which grew after plating on the surface of agar plates with the number of colonies obtained from the same quantity of the same dilution on the surface of plates of the three special media named.

We have not found in the literature that exact quantitative tests of the viability of typhoid, paratyphoid, and colon bacilli on such media have previously been made. Our results seemed so surprisingly contrary to expectation that the experiments were many times repeated for complete confirmation. The outstanding conclusion is that all these media eliminate a very large proportion of typhoid (and even paratyphoid) bacilli, and do not to any very notable degree inhibit the growth of B. coli. In saying this we do not at the present time at all intend to suggest that such media as those of Endo, MacConkey, and others are not excellent for the differentiation of these micro-organisms and for separating them when sufficiently abundant from a variety of intestinal and other organisms by selective elimination. But we maintain that for the isolation of typhoid and paratyphoid bacilli where they are relatively few in numbers, as in drinking water, in carriers, and in convalescent cases, their use is entirely *misleading as regards the value of a negative finding.*

Before giving figures for some typical quantitative experiments it is of interest to draw attention briefly to the results obtained by inoculating from pure cultures of typhoid, paratyphoid, and colon bacilli on plates of MacConkey's and Endo's media and ordinary agar. In each case the needle was charged from a single isolated colony and a streak was made on the surface of each medium in succession, beginning with MacConkey's medium and ending with the ordinary agar without recharging the needle. One example for each organism is given in Table I.

In other cases a series of mixtures of pure cultures of B. typhosus and B. coli in different proportions was prepared (e.g., 1 to 1, 1 to 5, 1 to 10, 1 to 15, &c.), and from these streaks were made on a series of media by means of a platinum needle recharged for each medium. The B. typhosus was not found on Drigalski and Conradi's medium or on MacConkey's medium when present in a mixture in a less proportion than 1 typhoid to 10 colon bacilli. In the case of Endo's medium (and the medium of Lentz and Tietz) the B. typhosus was recovered from mixtures of 1 typhoid to 15 colon bacilli, but not from any lower proportion of typhoid to colon bacilli.

TABLE I.

Medium.	Experiments		
	(*a*) B. typhosus.	(*b*) B. paratyphosus (B).	(*c*) B. coli.
MacConkey's medium...	Slight growth.	Fair growth.	Rich growth.
Endo's medium	Slight growth.	Marked growth.	Very rich growth.
Ordinary agar	Luxuriant growth.	Luxuriant growth.	Luxuriant growth.

Quantitative Experiments.

The dilutions were carried out with accurately graduated pipettes, and were made with sterile bouillon of the same batch as that in which the cultures were grown. The platings were always made with 20 c.mm. of the diluted culture (or mixture) measured by means of calibrated capillary pipettes. The fluid was placed on the surface of the medium and carefully spread over the whole area by continued gentle rubbing to and fro with a thinly drawn Pasteur pipette the last inch of which was bent at a right angle after sealing and turning up the end. The plates employed were Petri dishes of 9 cm. diameter and always contained the same amount of medium. The various media used in each set of experiments were prepared at the same time, and plates for each set were poured at the same time and were brought into use together after standing at the room temperature for a period of 8 to 24 hours.

TABLE II.—*Showing the Number of Colonies which Grew on the Various Media in Experiments made with Various Known Dilutions of Pure Cultures of B. Typhosus and B. Coli respectively.* (The experiments denoted by the same number were made at the same time in each case.)

Medium.	Number of colonies on plates inoculated with B. typhosus 20 c.mm.			Number of colonies on plates inoculated with B. coli 20 c.mm.		
	Experiments			Experiments		
	(1)	(2)	(3)	(1)	(2)	(3)
Ordinary agar	265	150	90	1100	550	86
Endo's medium	245	135	85	1000	500	60
MacConkey's medium	2	1	0	950	450	70
Drigalski-Conradi medium...	2	0	0	1050	500	64

The above table shows clearly that when relatively small numbers of typhoid bacilli are plated out they may entirely fail to grow on MacConkey's and the Drigalski-Conradi medium, even when there are from one to two hundred bacilli viable on ordinary agar present. Endo's medium, on the other hand, grew the great majority of the viable typhoid bacilli. This, however, is not the case unless the plates of Endo's medium are only very moderately dried before use. If Endo-plates and ordinary agar plates are allowed to stand for two or three days before use the Endo's medium becomes relatively very much more unfavourable. Thus in one case with 457 colonies on agar there were only 140 colonies on Endo's medium, and in another case with 100 colonies on agar only 4 of the bacilli grew on Endo's medium. As regards the B. coli, it will be observed that of the organisms viable on ordinary agar the great majority grew on all the media, though in this respect our general experience has been that MacConkey's medium is usually the least favourable of the three.

[3] Drigalski and Conradi: Zeitschrift für Hygiene (1902), vol. xxxix p. 283.
[4] MacConkey: Thompson-Yates and Johnston Laboratory Reports, vol. iii., part 3, pp. 40 and 151; vol. iv., part 1, p. 151; Journal of Hygiene, vol. v., p. 333; vol. viii., p. 322; vol. ix., p. 86.
[5] Endo: Centralblatt für Bakteriologie und Parasitenkunde, Originale, vol. xxxv., S. 109.
[6] Lentz and Tietz: Münchener Medizinische Wochenschrift, vol. l., p. 2139.
[7] Löffler: Deutsche Medizinische Wochenschrift, 1903, No. 36, Vereinsbeilage.
[8] Conradi: Centralblatt für Bakteriologie und Parasitenkunde, Beilage zu Abteilung 1, vol. xlii., Referate, S. 47.
[9] Fawcus: Journal of the R.A.M.C., vol. xii., p. 147.

TABLE III.—*Showing the Number of Colonies of B. Typhosus and B. Coli respectively which Grew from Mixtures made at the Same Time from the Same Cultures so as to contain* (A) *3 B. Coli to each B. Typhosus and* (B) *149 B. Coli to each B. Typhosus.* (The mixtures were diluted 1/62500 before plating.)

Medium.	A 3 B. coli to each B. typhosus. 20 c.mm.		B 149 B. coli to each B. typhosus. 20 c.mm.	
	Typhoid colonies.	Coli colonies.	Typhoid colonies.	Coli colonies.
Ordinary agar...	133	430	1	500
Endo's medium	120	400	0	450
MacConkey's medium... ...	1	460	0	420
Drigalski-Conradi medium	0	303	0	400

Here it appears that even when there is one B. typhosus to every three B. coli, and there are upon the plates almost the extreme number of colonies which will usually allow of certain differentiation, only a single typhoid colony appeared on MacConkey's medium and none on the Drigalski-Conradi medium.

Experiment B shows how, as the dilution of the B. typhosus with B. coli increases, the number of B. typhosus found even on an ordinary agar plate diminishes below the expectation, only one colony being found instead of three. This we have found to be our regular experience.

TABLE IV.—*Showing the Number of Colonies of B. Typhosus and B. Coli respectively which Grew from Mixtures made at the Same Time from the Same Cultures so as to contain* (C) *1 B. Coli to each B. Typhosus, and* (D) *19 B. Coli to each B. Typhosus.* (The mixtures were diluted 1/62500 before plating.)

Medium.	C 1 B. coli to each B. typhosus. 20 c.mm.		D 19 B. coli to each B. typhosus. 20 c.mm.	
	Typhoid colonies.	Coli colonies.	Typhoid colonies.	Coli colonies.
Ordinary agar	100	132	4	150
Endo's medium	75	114	3	136
MacConkey's medium ...	1	121	0	161
Drigalski-Conradi medium	2	75	0	152

Here it is seen that only when the number of B. typhosus present approximately equals the number of B. coli are any colonies of B. typhosus found on MacConkey's or the Drigalski-Conradi medium. Observations such as those recorded in Tables II., III., and IV. are typical examples of the results obtained in numerous experiments with different media recommended for the isolation of the B. typhosus. They are sufficient to explain the fact (emphasised most recently by Browning, Gilmour, and Mackie in the case of MacConkey's medium) that primary platings on selective media frequently fail to yield colonies of B. typhosus, even when that organism is undoubtedly present. If a selective medium is employed at all at any stage of the isolation and identification of B. typhosus, the medium of Endo is to be recommended. The results with that medium in the tables shown are good. But this will only be the case, as already stated, if the medium is very carefully managed as regards its relative moisture.

For purposes of cultural discrimination between B. coli and B. typhosus Endo's medium constitutes the most beautiful differential medium with which we are acquainted. The colonies of B. coli are well developed, of a deep red colour, and gradually acquire an intense metallic sheen, while those of B. typhosus are at first only faintly rosy in colour, and though they eventually become red they never acquire any metallic lustre.

TABLE V. (*Mixture A*).

Enhancement.	Medium.	Streak.	Colon.	Typhoid.
α	Ag.	1	Continuous growth.	1 isolated colony found.
		2	Numerous isolated colonies.	No colonies.
		3	Isolated colonies.	2 isolated colonies.
	E.	1	Continuous growth.	No colonies found.
		2	Fairly continuous growth.	3 isolated colonies.
		3	12 colonies.	8 colonies.
	M'C.	1	Continuous growth.	No colonies found.
		2	Continuous growth at first, then isolated colonies.	No colonies found.
		3	Isolated colonies.	No colonies.
β	Ag.	1	Numerous isolated colonies.	More numerous isolated colonies.
		2	No colonies.	No colonies.
		3	No colonies.	1 colony.
	E.	1	Continuous growth at first, then isolated colonies.	18 isolated colonies towards end.
		2	1 colony.	1 colony.
		3	No colonies.	No colonies.
	M'C.	1	Numerous isolated colonies.	2 colonies.
		2	3 colonies.	No colonies.
		3	2 colonies.	No colonies.
γ	Ag.	1	13 colonies.	4 colonies.
		2	No colonies.	No colonies.
		3	No colonies.	No colonies.
	E.	1	2 colonies.	18 colonies.
		2	No colonies.	No colonies.
		3	No colonies.	No colonies.
	M'C.	1	A number of isolated colonies.	2 colonies.
		2	3 colonies.	No colonies.
		3	No colonies.	No colonies

Ag. = Ordinary agar. E. = Endo's medium.
M'C. = MacConkey's medium.

TABLE VI. (*Mixture B*).

Enhancement.	Medium.	Streak.	Colon.	Typhoid.
α	Ag.	1	Continuous growth.	No colony found.
		2	Numerous separate colonies.	1 colony.
		3	12 colonies.	No colonies.
	E.	1	Continuous growth.	No colony found.
		2	Numerous partly fused colonies.	1 colony.
		3	Isolated colonies.	1 colony.
	M'C.	1	Continuous and broken line of growth.	No colony found.
		2	Numerous partly fused colonies.	No colonies.
		3	Isolated colonies.	No colonies.
β	Ag.	1	30 colonies.	2 colonies.
		2	3 colonies.	No colonies.
		3	No colonies.	No colonies.
	E.	1	Closely set separate colonies.	4 colonies.
		2	5 colonies.	2 colonies.
		3	5 colonies.	1 colony.
	M'C.	1	20 colonies.	No colonies.
		2	No colonies.	No colonies.
		3	3 colonies.	No colonies.
γ	Ag.	1	13 colonies.	2 colonies.
		2	1 colony.	No colonies.
		3	No colonies.	No colonies.
	E.	1	6 colonies.	1 colony.
		2	No colonies.	No colonies.
		3	No colonies.	No colonies.
	M'C.	1	8 colonies.	No colonies.
		2	No colonies.	No colonies.
		3	No colonies.	No colonies.

Ag. = Ordinary agar. E. = Endo's medium.
M'C. = MacConkey's medium.

The Method of Enhancement.

It is no part of our present intention to discuss in detail the brilliant-green enhancement method of Browning, Gilmour, and Mackie. In their hands, and in those of other observers, it has yielded very satisfactory results. Besides its action in the enhancement of the B. typhosus, the use of brilliant green has the advantage of exerting a bactericidal action on Gram-positive organisms. This action of the group of dyes to which brilliant green belongs was first demonstrated by two of us in work carried out with Kriegler [10 11] and with S. G. Scott.[12] It has been fully confirmed by Browning and his co-workers, as well as by Krumwiede and Pratt [13] and others. Browning, Gilmour, and Mackie further showed that brilliant green, which contains four ethyl groups in place of the four methyl groups of malachite green, is more favourable to the enhancement of the B. typhosus than the latter, which had been used by Löffler, Lentz and Tietz, and others.

As regards the practical utility of the brilliant-green enhancement method (which would be employed in preference to the later method with potassium tellurate [14] added where there was possibility of the presence of B. paratyphosus (B)) we venture to *suggest a modification*. Browning plates out the enhanced cultures on MacConkey's medium. If they are plated out on Endo's medium or on ordinary agar instead, the chance of finding B. typhosus or paratyphoid bacilli, if present, is very greatly increased, as the following observations show.

Of the undiluted mixtures A and B in Table III. 20 c.mm. were added to two series of brilliant-green peptone-water tubes according to the method of Browning, Gilmour, and Mackie. Each tube contained precisely 5 c.c. of the medium. After 24 hours' growth at 37° C. the cultures were plated on ordinary agar, Endo's medium, and MacConkey's medium by making three successive strokes on each medium with a narrow loop. The loop was recharged for each plate. The results from three different strengths of brilliant green (1/10,000 solution 0·15, 0·4, and 0·8 c.c., indicated by α, β, and γ respectively) are shown in Tables V. and VI.

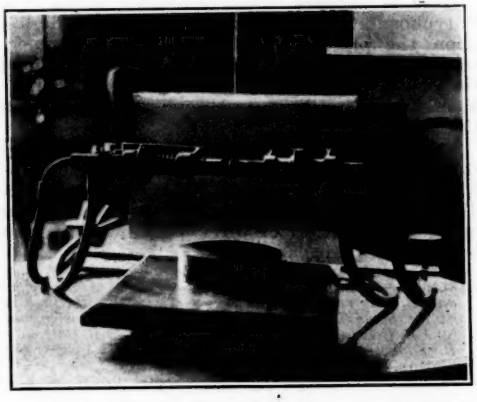
What Table V. shows is that, in accordance with the quantitative estimates given in previous tables, MacConkey's medium is inferior to Endo's medium and to ordinary agar for the detection of the B. typhosus after enhancement. Its use may lead to negative findings even when typhoid bacilli are actually present in some numbers.

Table VI. again shows the disadvantage of plating on MacConkey's medium after the enhancement. In all three cases the B. typhosus failed to appear on plates of this medium, although it was found both on Endo's medium and on ordinary agar. It may be added that on diluting the brilliant-green peptone-water culture β of Table VI. to 1/250 and plating out 20 c.mm. of the dilution by spreading on the surface of poured plates of ordinary agar, Endo's medium, and MacConkey's medium, about 100 colonies of B. coli were found on each medium, with two colonies of B. typhosus on the agar, one colony on Endo's medium, and none upon MacConkey's medium. Thus, as the result of the enhancement the relative number of B. coli had decreased and the number of B. typhosus had increased both relatively and absolutely. The ratio found on plates before enhancement was 1 B. typhosus to about 500 B. coli (see Table III., B), but had now become 1 or 2 B. typhosus to each 100 B. coli).

The Light Method.

Although the method of enhancement has yielded excellent results, it has the drawbacks that a considerable number of enhancing cultures are required to make sure of including the most favourable concentration of brilliant green, and that it lengthens the process of isolation by some 24 hours. In the method which we are now about to describe relatively large quantities of the suspected material are worked up for examination and isolated colonies of B. typhosus or B. paratyphosus (A) or (B) may be obtained within 12 to 24 hours by the use of a single plate. The method was devised by one of us (G. D.) and is based on the experience of numerous previous investigations on the biochemical action of actinic light. It consists in the subjection of an ordinary agar plate liberally spread with the bacterial emulsion to a graduated exposure to the rays of an arc light. The arc formed between silver electrodes has so far given us the most satisfactory results.

FIG. 1.



The lamp employed by the authors for exposure of the agar plate to the arc light.

Technique.

The illustration (Fig. 1) shows the lamp which we employ. It consists of two small metal pillars bracketed upon an insulating slate base. The pillars carry the horizontal arms upon which electrodes, water-cooled in the manner devised by Bang, are screwed. These arms can be approximated to each other by means of thumb-screws. They consist of an outer tube within which runs a smaller inner tube serving as inflow for the cooling water which returns by the outer tube.[15] The arc is made by an electric current of 5 to 7 ampères with a voltage of 30 to 35 volts. The cooled electrodes give a perfectly cold arc light whose action is entirely free from any heat effect. In exposing an inoculated plate the lid is removed and the agar surface is directly exposed to the arc at a distance of about 6 cm. Upon the Petri dish is placed a sheet of blackened metal (or cardboard) in which an oblong window has been cut. By means of another sheet of blackened metal the window, which is at first fully open, is gradually closed. The different exposures given along the strip of window may with advantage be 30, 60, 90, 120, 150, 210, and 240 seconds, with a current of 7 ampères and 30 volts. In making such a plate from 0·5 to 1 c.c. of fæces are broken down in 2·5 c.c. bouillon and allowed to stand for about two hours. Two or three large

[10] Dreyer, Kriegler, and Ainley Walker: Journal of Pathology and Bacteriology, vol. xv., p. 133.
[11] Kriegler: Centralblatt für Bakteriologie und Parasitenkunde, vol. lix., p. 481.
[12] Dreyer, Scott, and Ainley Walker: Journal of Pathology and Bacteriology, vol. xvi., p. 146.
[13] Krumwiede and Pratt: Journal of Experimental Medicine, vol. xix., p. 501.
[14] Browning, Mackie, and Smith: Journal of Pathology and Bacteriology, vol. xix., p. 127.

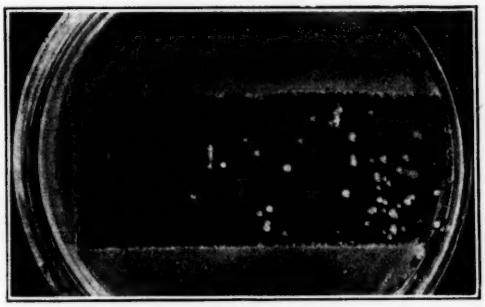
[15] An apparatus which will be quite adequate for the purpose can be made at a comparatively small cost.

drops are then taken from the upper part of the fluid (preferably after brief centrifugalisation) and spread over the surface of an agar plate in the manner already described. The plate, which should be distinctly moist, is then subjected to the action of the arc light as already described, and incubated with the agar uppermost.

The method has been tested on mixtures of B. typhosus and B. coli in the following proportions: 1 to 1, 1 to 10, 1 to 20, 1 to 30, 1 to 50, 1 to 80, 1 to 100, 1 to 150, and 1 to 200. In every case where there were not more than 50 B. coli to each typhoid bacillus numerous isolated colonies of the latter were always found on some portion of the exposed area of the plate. Where there were more than 50, but fewer than 200, B. coli to each B. typhosus a few colonies at any rate of the latter have almost always been discovered on the plate. Indeed, in one experiment in which there were at least 500 B. coli to each B. typhosus a few isolated colonies of the latter were recovered. The colonies of B. coli on the exposed portion of the plate are well developed, whitish, and opaque, while those of B. typhosus are tiny, dewdrop-like, and quite transparent after 18 to 24 hours. From the latter streaks are made on the surface of plates of MacConkey's medium, Endo's medium, and ordinary agar in the order named with a once charged needle in order to confirm the diagnosis. The resulting growth is subsequently submitted to the usual tests.

The plate shown in Fig. 2 is from an experiment in which there were 50 B. coli to each B. typhosus in the mixture used for plating. The large colonies along the exposed strip are colonies of B. coli, while the numerous small colonies are colonies of B. typhosus. The density of the mixture used

FIG. 2.



Slide showing large colonies of B. coli and numerous small colonies of B. typhosus.

for plating is indicated by the complete opacity of the growth outside the limits of exposure to light. In view of the encouraging results of these experiments we have recently applied the method in the examination of the fæces of convalescents and suspected carriers. Of the cases examined *seven* have already yielded positive results by this method *at the first examination*, though the ordinary methods failed to afford any evidence of the presence of B. typhosus or B. paratyphosus. In five of the cases B. typhosus was isolated from the light plate and in the other two B. paratyphosus (B).

Obviously, the number of cases is at present much too small to justify a confident opinion regarding the ultimate practical utility of the method. But our results have up to the present been so satisfactory that it seems desirable under existing conditions to offer the method for the use and criticism of others, even though our evidence from actual cases is at present scanty.

A CASE OF

RUPTURE OF THE HEART IN A CHILD.

BY JOHN ANDERSON, M.B., C.M. GLASG.,
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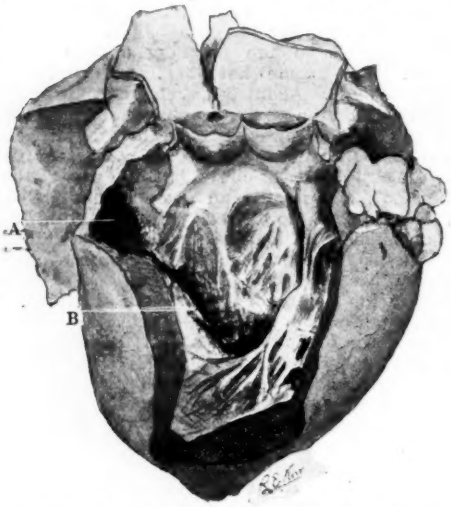
THE case is of interest, firstly on account of the age of the child, and secondly on account of the occurrence of a congenital stenosis of the coronary arteries and other manifestations pointing to inherited syphilis. The history was very meagre and unsatisfactory. The child, a girl 5 years of age, was, as far as we could learn, in good health up to the morning of her death. She had been somewhat neglected and was poorly nourished. About 9 A.M. on the morning of the child's death the woman in charge of her left the house, and the child was to stay in bed until she came back. On her return half an hour later she found the child had got out of bed and was sitting on the floor, looking ill and complaining of sickness. There was no history that the child had fallen out of bed. A little stimulant was administered, but as there was no sign of improvement the woman became alarmed and took the child to a neighbouring ice-cream shop, where she left her in charge, while she went in search of a doctor. The proprietor of the shop, afraid the child was dying, carried her to the nearest police office in the hope of obtaining the services of the police surgeon, but the child expired on the way. There was a history that eight weeks previously the child had had a fit, and a year ago she was in the parish hospital under treatment for eczema.

Necropsy.—The pericardium was distended with fluid blood. A hæmorrhagic area, 1 in. in length by ¾ in. in breadth, was noted on the anterior aspect of the heart along the line of the interventricular septum at its upper third, and also a small perforation within this area. The heart was removed and examined. It was normal in size, pale in colour except at the hæmorrhagic area. On opening the cavities a slight degree of dilatation was noted, but there was no hypertrophy of their walls except, perhaps, a small area in the left ventricle at the immediate apex, where the muscular substance was altered in appearance, abnormally pale, and somewhat translucent. The columnæ carneæ were unusually delicate and in places thread-like in character, and this condition was more noticeable in the case of the left ventricle.

The lesion which had given rise to the rupture was of remarkable character: a hæmatoma, ½ in. in diameter, had formed in the wall of the left ventricle and septum at the place of discolouration above noted. Its cavity was filled with blood clot and its walls were ragged and granular. At its lower aspect it had ruptured externally into the pericardium, and a large probe could easily be passed through the aperture, which was situated ½ in. from the base of the ventricle. The thinned inner wall communicated with the interior of the ventricle by a large and irregular aperture, which was continuous with an extensive rupture across the inner portion of the posterior wall of the chamber. The torn area almost encircled the ventricle, and reached as far as a point immediately beneath the position of the left auricular appendix. The laceration occupied a fair depth of the muscle, and the wall of the ventricle, when viewed by transmitted light, was quite translucent. The right ventricular wall was intact. The valves were of normal size and their curtains were healthy.

Examination of the coronary vessels showed a stenosis of the lumen of both arteries, and the descending branch of the left coronary artery was obliterated at the seat of the rupture and could not be traced beyond it. Above the rupture for a distance of ½ in. its inner coat was discoloured, and a thin layer of fibrin was adherent to the intima. A small thrombus was present in the right coronary artery 1 in. from its origin. The venous sinus was dilated, and immediately beyond the valve a large thrombus was found in the great vein.



Drawing of heart showing (A) hæmatoma in septum and (B) rupture across posterior wall of left ventricle.

The lungs were non-adherent, and, apart from an area of congestion at the anterior edge of the upper lobe of the left lung, they were healthy. The larynx, trachea, and œsophagus were normal. The tonsils were slightly enlarged. The lymphoid nodes at the root of the tongue were unduly prominent, and the lymphatic glands on both sides of the neck and also the thymus gland were somewhat enlarged. The stomach was healthy. The lymphoid tissue of the small intestine was increased in amount and the Peyer's patches were enlarged. The mesenteric glands were enlarged and a number of them showed evidence of caseation.

The liver was of large size, firm in character, and slightly waxy in appearance. The spleen was somewhat enlarged and indurated with the Malpighian bodies unduly prominent on section. The right kidney was firm and congested, but otherwise it appeared normal on naked-eye examination. The left kidney was of normal size, more fibrous-like in appearance, and there was an area of pallor, 1 in. by 1 in., at its lower pole, suggestive of an old infarction. The suprarenals were small in size and the relationship of the cortex to the medulla was well maintained.

The brain and the other organs of the body were healthy.

Microscopical Examination of the Case.

Heart.—Paraffin and frozen sections were prepared and examined from different parts of the organ. There was no evidence of fatty degeneration, but the cells were dissociated over large areas in nearly every section examined and the striation of the bundles was to a great extent impaired. A number of the cells showed the presence of small vacuoles. In the region of the rupture the appearances of advanced ischæmic atrophy were noticed, and in other areas of the heart this condition was also observed, but to a less pronounced extent. In other parts of the heart, and especially in the area of the left ventricle in the vicinity of the apex, a distinct increase in the fibrous tissue was found, giving to the sections a highly cellular appearance. No gross areas of fibrosis were present. The small blood-vessels in the substance of the muscle were found to have a distinct thickening of their walls with cellular infiltration of their middle coats. The condition of the coronary arteries was that of a general stenosis. There was thickening of the inner coat noted in the smaller vessels. The thickening was patchy in its distribution, and large areas were normal. Inflammatory cells were seen in the neighbourhood of the vessel wall. Sections of the thrombosed vessels showed that this had taken place at affected portions of the inner coat.

Liver.—The sections showed in different places a distinct thickening of the capsule. There was a leucocytic infiltration between the liver cells of the nature of a pericellular cirrhosis, and the cells, although somewhat separated, were otherwise unaltered. Small aggregations of inflammatory cells were seen at different places within its substance. The fibrous tissue throughout the organ was generally increased and this increase was more marked in the portal zones. A distinct increase of fibrous tissue around the smaller arteries was also noted. Although miliary gummata had not been recognised in the naked-eye examination of the organ, one or two were met with in the microscopical examination of the sections, and their appearances were quite unmistakable.

Kidney.—The sections were prepared from portions of both kidneys. In each of them well-marked alterations of the nature of catarrhal and interstitial nephritis were found. Sections from the area of the left kidney, which presented the appearance of an infarction, showed a limited peripheral area of coagulation necrosis due to embolism. The changes in the kidney were more extensive in the cortical region, but the medullary portion was also considerably affected. Most of the glomeruli presented normal appearances. A number, however, showed increase of fibrous stroma, granular change of the epithelium, and partial loss of the capsular epithelium, while others showed evidence of shrinkage of the tuft, with a large space between it and the capsule. Congestion of the glomeruli was a marked feature of some of the sections, but in others it was present only to a slight degree. The changes in the convoluted tubules were the most marked feature of the specimen. The epithelium was swollen and granular, and desquamation of cells was abundantly present. A number of the tubules were dilated and extravasated blood was present in some of them. The straight tubules were much less affected, although desquamation of their cells was also noted. The stroma in the cortical region was increased in amount and highly cellular areas were interspersed between adjacent groups of glomeruli and tubules, giving a segmented character to the organ. The change in the interstitial tissue was chiefly of the fibroblast type, but areas of lymphocytes were also present. In the medullary portion of the organ the increase in the interstitial tissue was considerable and of the nature of an actual fibrosis. The fibrous tissue around some of the larger vessels was increased, but

thickening of the walls of the smaller arteries seen in the section might be interpreted as a normal condition of children (Carpenter).[10]

Spleen.—The capsule was thickened and the trabeculæ within the organ were larger than the normal size. The pulp had undergone considerable alteration. The fibrous-tissue elements were increased and a leucocytic infiltration was also present. The walls of the smaller arteries were thickened and the muscular coat proliferated. The Malpighian bodies were not enlarged, but, if anything, they appeared smaller in size, and their undue prominence was due to the changes in the pulp of the organ.

The microscopical changes in the other organs were of no special significance.

Remarks.—Cases of rupture of the heart occurring spontaneously in children are very rare; and so far I have been unable to find an account of a similar case.

The interpretation which was placed on the case was that the child was the subject of an abnormal development of the coronary arteries. The vessels were unusually narrow, and further, the lumen was encroached upon in places by the areas of thickening in the inner coat due evidently to a syphilitic endarteritis. The hæmatoma in the septum was more than likely the result of the thrombosis in the descending branch of the left coronary artery, and represented really a dissecting aneurysm of the heart wall; and the case is comparable with that described by Lazarus-Barlow,[1] which, however, occurred in a man of advanced life.

The other view was that, as a result of the occlusion of the vessel and an insufficiency of the anastomosis, necrosis of the heart wall (infarction) had occurred. The endocardial blood had forced an entrance into the muscle, and, tearing its way with each successive beat of the heart through the weakened tissues (as suggested by Birch-Hirschfeld[3]), had reached the pericardium and perforated it. Although ischæmic atrophy was present in sections of the heart wall, this was more apparent at the apex of the ventricles and was by no means a feature of the sections which went through the actual ruptured tissue itself. Coronary artery disease is well recognised as a cause of myomalacia cordis, but ultimate rupture as a result of same, although it does occur, is by no means so common as one would expect. Steven,[5] in an investigation of the coronary arteries and their effects on the heart, met with the condition only once in 102 cases of affected coronary arteries, although definite myomalacia was present in five. If microscopical examinations had been undertaken it is more than likely the lesser degree of heart softening such as was experienced in our sections would have been met with more frequently.

The other factors of our case bulk considerably in our interpretation of the condition—namely, that we were dealing with a heart which was weakened by inherited syphilis as well as by the thrombosis of the vessel. Evidences of syphilis were seen in the other organs as well as in the heart itself.

It has been held for long that inherited syphilis plays an important part in the causation of congenital heart disease. Most of the writers have dealt with the subject of the graver defects of the organ, such as patency of the interventricular septum and abnormalities of the great vessels, rather than with changes in the substance of the heart or lesions of the coronary arteries. The recent advances in our appreciation of its rôle in the causation and its actual frequency have been strengthened from the clinical side by the study of such cases with the application of the Wassermann test either to the blood of the child or to that of the parents. Findlay and Robertson[8] record the presence of a positive reaction in 9 out of 11 cases which they had observed. Browning[9] (also quoted by Findlay and Robertson) gives Watson's results of a positive finding in 17 out of 25 cases of congenital cardiac disease, while Holt, on the other hand, records a distinctly adverse finding.

From the pathological side the finding of the spirochæta pallida in the heart muscle confirms the diagnosis. Warthin[6] has found evidence of changes in the heart, due to syphilis, in a considerable number of cases. He has recognised an especial form of interstitial myocarditis due to the presence of the spirochæta pallida, and holds that such may exist independently of other signs or symptoms of congenital syphilis and may even be the only manifestation. He also regards the cardiac weakness produced by the presence of the S. pallida as predisposing to the subsequent other infections of the heart. He has found it associated with infantilism, hypoplastic constitution, or less severe forms of under development and as tending in later life to the production of fibroid heart and coronary sclerosis. In a later paper[7] he discusses the primary tissue lesions in the heart produced by the S. pallida, and concludes that syphilis is one of the most important factors in the causation of cardiac disease. The appearance of the heart, he states, may not be such as would have been called syphilitic in the older interpretation of our knowledge of this disease. He also found it possible to demonstrate the presence of the spirochætes in the heart when it was impossible to demonstrate them elsewhere, and he regards their localisation in the heart as even more common than in the liver. In our case we were able to demonstrate their presence in the heart muscle, but only after careful examination, and their numbers were few. In the kidneys they were obtained with less difficulty and were more abundant, but in spite of the presence of miliary gummata it was impossible to say that they were present in the liver.

The histological change in the liver was such as is associated with congenital syphilis—viz., a pericellular cirrhosis. The changes in the kidneys were of the nature of the combined catarrhal and interstitial nephritis which has been met with in syphilitic infants (Carpenter and others[10]). Although it is possible that such a condition might have its origin in intestinal or other toxins, still, with the other factors of the case, we may regard the changes in them as an additional indication of the syphilitic nature of the disease.

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Glasgow.

A CONFERENCE on Our Food During War will be held at the Institute of Hygiene on Monday next, March 29th, at 3.30 P.M. Sir Malcolm Morris will preside, and well-known authorities will express their views.

ON THE MOVEMENTS OF THE NORMAL STOMACH.

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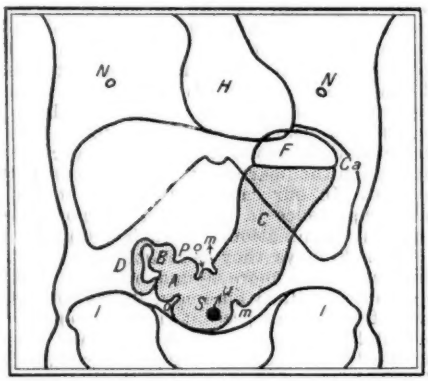
CONSIDERABLE discussion has arisen and much diversity of opinion has been expressed by surgeons, anatomists, and radiologists concerning the configuration and changes of form of the separate segments of the stomach. It must be admitted that the stomach *in vivo* and in an active phase is a very different object from the same organ as seen on the operating table or in the post-mortem room. Bearing in mind the researches of Försell,[1] of Stockholm, and the various accounts given by radiologists of renown, we have adopted the following description as most convenient for our purpose.

1. *Radiological Divisions of the Stomach* (*Fig. 1*).

In the erect position the organ is syphon or J-shaped, consisting therefore of a vertical and of a horizontal component, the former constituting about

FIG. 1.



Normal stomach in erect position. F, Fornix. C, Corpus. S, Sinus or vestibule. A, Antrum. B, Cap of duodenum. D, Descending duodenum. N, Nipple. H, Heart. I, Ilium. U, Umbilicus. Ca, Cardiac constriction. *m m*, Angular constriction. *o o*, Antral constriction. P, Pylorus.

two-thirds of the whole. The angular notch (incisura angularis) on the lesser curvature marks the separation of the two. The vertical portion, sometimes termed the vertical stomach, is subdivided into (*a*) the fornix (fundus) lying above the œsophageal opening and as a rule containing air (air sac or reservoir); and (*b*) the corpus, which is vertical in the erect but slightly oblique in the recumbent position.

The pyloric or horizontal part (pars pylorica), as visualised on the screen, during certain phases of its activity only, is subdivisible into (*c*) the sinus or vestibule, (*d*) the antrum, and (*e*) the pylorus. The antrum may be found firmly contracted after death, and is then known as the pyloric canal.[2] During the concentric contraction of the antrum the latter becomes practically separated by a deep incisure from the sinus. This may be termed the antral constriction.

That part of the duodenum which first receives and temporarily retains the opaque chyme resembles the pyloric part in all essential features. It has been styled the cap or pilleus ventriculi,[3] and represents the proximal half of the first portion of the duodenum. In reality the cap is to be regarded as a gastric annexe, and as such must be included in the description of the stomach.

2. *Innervation of the Stomach.*

The musculature of the stomach in association with its intrinsic nerve plexuses, ganglia, and extrinsic nerves manifests two chief properties—viz., (*a*) tone, and (*b*) peristalsis. Of these tone appears to be pre-eminently a function of the muscular fibre itself, and therefore primarily myogenic. Peristalsis, on the other hand, is dependent on the integrity of the myenteric plexus and ganglia situated between its muscular coats.

At the same time both tone and peristalsis are controlled and coördinated by the extrinsic nerves—the efferent fibres of the vagi and splanchnics. In addition to these connexions afferent fibres, associated with interoceptors lying within the mucosa and between the muscular layers, run from the submucous and myenteric plexuses, in the vagi and splanchnics, to the cord and medulla (viscero-motor and viscero-inhibiting centres), proceeding upwards by synapses and relays to the general subconscious emotional centres of the optic thalami.[4] In the absence of the higher consciousness these centres probably exert their influence by connexions with the corpora striata. Furthermore, both tone and peristalsis lie under the influence of the highest emotional states—exaltation and joy, anger and fear, worry and grief—the loci of which are presumably situated within the cerebral cortex. The centrifugal paths will run either through the basal ganglia or direct to the visceral medullary centres.

The gastric mucosa is endowed with protopathic sensibility (heat and cold) and with protopathic appetite sensibility by nerve-twigs running into it from the submucous plexus.[5] The stimulus for appetite appears to be the secretion of acid (0·5 per cent.). The sensory apparatus for hunger apparently lies between the muscular layers, and is stimulated by a certain type of contractions of the empty stomach (hunger contractions).

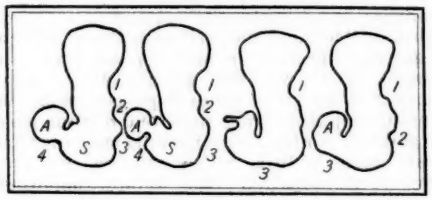
3. *Technique and Description of Movements.*

The outlines and activity of the stomach become visible when 10 ounces of an emulsion or fine creamy suspension of 2–4 ounces of bismuth subcarbonate or oxychloride, made with milk or water, are administered; 1½ ounces of lactose may be mixed with the solution in order to make it more palatable.[6] It is preferable to select a sparely nourished individual, and the canalisation should be observed in the erect position.

If a small quantity, about 1 ounce, be first swallowed the bismuth sometimes may be seen to run down as a narrow longitudinal band direct to the sinus, filling the canalis gastricus,[7] which lies along the lesser curvature. It is surmised that the oblique muscular fibres may temporarily convert the gastric groove along this curvature into a gastric canal or arcade. However this may be, when tone is normal the bulk of the food is held up for a time beneath the air reservoir and only gradually canalises the corpus, reaching the sinus gradatim.[8] When the repletion of the pars pylorica is complete the recumbent position is assumed, and the patient reclines on the right side for a few minutes in order to fill the duodenum.

Under these circumstances the movements may be seen to commence on the greater curvature of the corpus just below the cardiac notch (Home's point), and they are propagated as a slowly recurring series of annular constrictions becoming deeper and more pronounced as they approach the pylorus. In Fig. 2, A, as many as four successive waves may be counted simultaneously. The condition 6 seconds after A is represented by B; after 14 and 20 seconds by C and D respectively. At D the stomach has practically reached the stage of A, and the antrum has

FIG. 2.



After Rieder. Changes of form during contraction. A, Antrum. S, Sinus. 1, 2, 3, 4, Waves of constriction.

just re-expanded preparatory to the commencement of a new systole. This lasts apparently about 12–14 seconds, and is followed by the stage of diastole or (active ?) dilation which occupies 6–7 seconds.

During the diastole chyme will be drawn from the sinus and, if the pylorus be open, pancreatic juice from the duodenum. If the pylorus be shut contraction of the antrum will drive the chyme backwards into the sinus in an axial stream. During diastole the most essential change in outline of the pars pylorica results in the formation of a new antrum. The antrum is therefore of supreme importance in the comminution and, the pylorus being open, the propulsion of the chyme. It has accordingly been termed the *motor* of the stomach. It may be compared to the ventricle of the heart, the sinus to the auricle, and the cap to the aortic bulb. Obviously peristalsis is *par excellence* the function of the pars pylorica, and in particular that of the antrum.

4. *Action of the Vagi and Splanchnics* (*Fig. 3*).

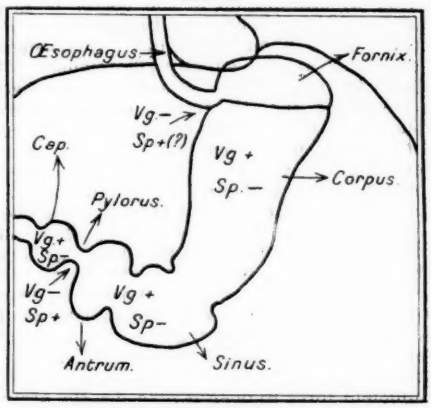
At the present time there is no general consensus of physiological opinion as to the action of these two nerves on the gastric outlets. It appears to vary in different animals. We know that they perform opposite functions generally,[8a] and that the effects of stimulation of the splanchnics resemble those of adrenin.[9] We may therefore postulate the existence of an antagonistic hormone, possessing intimate relations with vagal activity. Extract of pituitary,[10] after a slight inhibition, produces a powerful and persistent augmentation with increase of the rhythmical movements of the stomach. Adrenin appears, on the other hand, to diminish the excitability of the vagus, although the precise conditions of its occurrence have not yet been ascertained.

Moreover, there appear to be differences in individuals as to the relative excitability of the nerves. Some clinicians have described the conditions of vagal and sympathetic hypertonia[11] according as one or the other nerve appears to possess an ascendancy in the production of symptoms. In the former (by far the more numerous) the oculo-cardiac[12] reflex of the trigeminus is accompanied by a diminution of cardiac beats, in the latter by an increase. Vagopathic individuals would be more likely to suffer from gastric hypertonus, antral spasm, hyperacidity, and from spasm of the duodenal cap. The splanchnopathic subject might exhibit an inclination to sluggish digestion, delay of gastric evacuation, and a tendency towards atony, pyloric spasm, and gastric ectasia. Individuals in whom cutaneous stimulation refuses to elicit the cutaneous vagus reflex (*vide infra*) may belong to this class; although fear and anxiety in both categories by stimulation of the splanchnics would induce a similar failure.

We know that stimulation of the vagus dilates the cardiac opening of the œsophagus, and the opposite condition of cardiospasm may be due to vagus inertia, inhibition, to the activity of local ganglia or to the action of the sympathetic. A better term for the latter condition is cardiotonia. The designation "achalazia" has been recently proposed.[13]

The vagus also exerts a tonic effect on the walls of the stomach, stimulates peristalsis of the organ and of the cap, and secretion of the gastric glands. The splanchnics produce a diminution of tone and a decreased peristalsis.

FIG. 3.



vg +, Vagus contraction. vg −, Vagus relaxation. sp +, Splanchnic contraction. sp −, Splanchnic relaxation.

With regard to the action on the pylorus the general effect of the vagus in man is probably to relax and that of the sympathetic to increase its tone.[14] Similar results may be inferred as to the action of the nerves on the cap, and on a problematical physiological sphincter which separates it from the distal duodenum.

5. *Gastric Reflexes.*

It has been suggested that the difficulty or delay of canalisation of the corpus is not due to a necessary distension of its walls (assuming that the empty stomach has no capacity), but to an œsophageal reflex[15] which controls the oblique muscles and increases their tone. It is more probable that the reflex may arise from the gastric mucosa itself. But the appearances observed when the recumbent position is adopted throughout seem to negative this hypothesis.

At times the entire stomach passes into a quiescent passive state. This may be produced by repletion of the small bowel acting reflexly by way of the splanchnics. Impulses may pass along these nerves from the highest emotional centres (anxiety and fright) which induce a similar condition of gastric stasis.

Interesting facts have been recorded with regard to the hungry stomach in dogs.[16] With the nerves intact all mechanical and chemical stimulation of the intestinal mucosa cause inhibition of gastric tonus and cessation of hunger contractions. Pure gastric juice and HCl (0·5 per cent.) cause the quickest and longest inhibition. Moreover, sodium carbonate itself has a slight inhibitory effect. When the vagi and splanchnics are divided similar results follow, but the latent period is much prolonged and the degree of inhibition is considerably diminished. This inhibition of tone and contraction therefore involves both long or central, and short or local reflex paths. The longer reflexes are dominant. It is uncertain how far one can apply the results to the digesting stomach and to man, since it seems justifiable to assume that the vagus itself has gradually come to participate much more freely in these reflexes, and that in the normal stomach such excitation may often result in hypertonus and hyperperistalsis of that organ. It is also noteworthy that stimulation of the gastric mucosa itself, in the above experimentation, by alkalies or acids, and by the secretion of gastric juice produces a depression of the hunger contractions.

Reflex activity on the part of the *vagus* may be induced by stimulation of the costal margins of either side by means of a gentle sliding movement of the fingers upon the skin.[17] Sometimes the appendicular area is equally efficacious. After a variable interval—10 to 30 seconds or longer, in the meantime the stimulation being continued—peristalsis of the stomach commences, and by constant repetition of the excitation a complete evacuation of the contents is possible. The most favourable time is about three hours after food. With a binaural stethoscope applied over the site of the duodenum the flow of chyme is plainly audible. On the fluorescent screen at times a fleeting evanescent wave of dilatation is seen to precede the peristalsis, thus apparently bringing the movement into line with the peristalsis of the small bowel and the law of the intestines.[18] In other words, it becomes a true peristalsis. It does not follow that a relaxation of the pyloric sphincter of sufficient force to open it precedes the arrival of each wave of contraction. In the early stages of gastric digestion the stimuli are subliminal and the summation of several is necessary to produce this effect.

6. *The Rôle of the Acid Secretion: Duodenal Reflexes.*

Since the gastric motility is quite as vigorous when the carbonate is substituted for the oxychloride it is unnecessary to ascribe to the acid any serious influence over the function of peristalsis. It has also been accepted that the presence of acid on the gastric side relaxes the pylorus, whilst on the duodenal side acid evokes a reflex which shuts the sphincter. Inasmuch as the cap and antrum are physiologically essentially similar it is difficult to subscribe to this theory. Moreover, it does not explain many of the facts.

If the statements of Boldyreff[19] are verified the play of the pylorus is by no means a simple matter. It appears that the alkalinity of the pancreatic secretion is normally required to neutralise the acid (0·5 per cent.), and it seems probable that the juice enters the stomach itself to accomplish this purpose. Boldyreff ascribes this influx to an antiperistalsis on the part of the duodenum. Have we any evidence of this in man? It is common to see a morsel of bismuth moving towards the jejunum suddenly stop in the middle of the descending duodenum and turn back for a moment before resuming its course. Is this due to an antiperistaltic wave (anastalsis) of the duodenum, or is it a suction effect on the part of the dilating antrum with an open pylorus? The antrum usually contracts so powerfully that its opaque contents disappear entirely for an interval of time, and the succeeding dilatation is probably no less energetic. Prolonged observations are necessary in order to discriminate. Both events may participate. The theory of duodenal reflex closure and its absence in ulcer of the duodenum is at least a subject for argument and difference of opinion.

In so-called duodenal irritation the whole process of gastric digestion is more speedy than in the normal. It is not due to duodenal irritation; rather is it a sign of reflex vago-gastric excitation. Afferent impulses from near and distant areas, as the gall-bladder (calculi), appendix (chronic appendicitis), colon (colitis, colica mucosa, and certain forms of constipation), the kidney (nephroptosis, calculi), and many other even extra-abdominal situations,* are carried to the medulla and reflected along the vagus to the stomach and duodenum. The duodenal irritation is the effect, not the cause. Any individual with hypertonus of the stomach, rapid gastric evacuation, with lively antral peristalsis and exalted pyloric display, is potentially liable to ulceration of the duodenum. The outcome depends on the integrity and reactive capabilities of the pancreas. The increased gastric phenomena invoke a greater production of secretin[20] and a heightened reflex secretory excitation of the vagal branches supplying the pancreas.[21]

Further investigations are necessary before we can fully comprehend the intricate behaviour of the pylorus and the manifold activities of the antrum and duodenum. Also the relations between ulcer of the lesser curvature and the formation of the lesser gastric canal, and between splanchnic irritation and ulcer of the pylorus, are suggestive but so far speculative.

Achylia gastrica and senile dyspepsia with deficit of gastric juice may result from a diffuse fibrosis affecting the gastric glands and pylorus. In old age, moreover, there supervenes a condition of atony in the sphincters generally which leads to diminished efficiency. But an extended discussion of the opaque stomach and duodenum in disease would lead us far beyond the limits of this communication.

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* In other words, the areas may be either enteral or parenteral (Cameron).

BERI-BERI AT FALMOUTH.—At the last meeting of the Falmouth and Truro port sanitary authority the medical officer of health, Dr. G. E. Lanyon, reported that several vessels had arrived with cases of beri-beri on board. They were chiefly vessels engaged in whaling. Investigation of the patients gave no satisfactory explanation.

A NOTE ON

CERTAIN PECULIAR CRYSTALS FOUND IN THE CEREBRO-SPINAL FLUID FROM A CASE OF SEPTIC MENINGITIS.

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ON Feb. 16th, 1914, I received from Dr. A. Gardiner Robb, medical superintendent of the Belfast Fever Hospitals, a sample of cerebro-spinal fluid drawn from a case clinically resembling cerebro-spinal fever. Further examination of the patient, a girl aged 18 years, discovered that there was present a chronic otitis media, which had probably set up a septic meningitis. The patient died soon after the lumbar puncture. Permission to hold a post-mortem examination was refused.

The cerebro-spinal fluid on centrifugalisation yielded a copious deposit. This deposit consisted of pus cells of the neutrophil polymorphonuclear variety, along with large numbers of peculiar crystals. (Fig. 1.) The bottle in which this fluid was sent to me had been most carefully sterilised before use, so that there could be no question of contamination. The crystals when examined in a hanging-drop preparation seemed in some cases to be intracellular. They varied greatly in size from

FIG. 1.

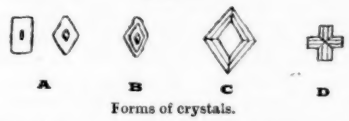
Deposit from cerebro-spinal fluid containing crystals. × 860.

2 to 10 μ. Mr. A. R. Dwerryhouse, D.Sc., F.G.S., lecturer in geology, Queen's University, Belfast, kindly examined the crystals and reported as follows:—

The crystals are elongated and appear somewhat rounded at the ends. They are colourless and transparent, and possess a refractive index greater than that of the clove oil (1·53) in which they are mounted. Most of them contain a central nucleus or spot (A, Fig. 2), which appears to have crystal outlines and sometimes gives the effect of zonal structure. This effect may be due to the existence of pinacoid facets flanked by one or more pyramid faces (C). There are also a few twin crystals (D). The crystals are strongly doubly refracting, and the extinction is straight which places them in either the tetragonal, hexagonal, on rhombic system. From the general form I am inclined to think they are rhombic.

These crystals were found to be soluble in dilute acids (organic and inorganic) and alkalies, and in acid spirit. They were insoluble in alcohol, ether, chloroform, acetone, or boiling water. They were

FIG. 2.



Forms of crystals.

unstained by Gram's method, eosin, methylene blue, carbol-fuchsin, iodine, or collargol. No further crystals were yielded on evaporating down the supernatant fluid left after centrifugalisation.

I attempted to obtain some information as regards the chemical composition of these crystals, apart from their solubilities; but from their small size and the small quantity available this part of the examination was difficult. The fact that these crystals crystallised out from the cerebro-spinal fluid itself renders it highly improbable that chlorides are present; sulphates are only present in such very minute quantities in the serous fluids that their presence is most unlikely; oxalates are insoluble in acetic acid, while these crystals are soluble in acetic acid. Thus it seemed to me that phosphoric acid was the acid radicle probably present. In examining for phosphates I followed A. B. Macallum's method[1] for the detection of phosphates microchemically. Films of the crystals were prepared on coverslips, fixed in alcohol, and placed in a nitric acid solution of ammonium molybdate for 24 hours at a temperature not exceeding 35° C. The film was washed with dilute nitric acid and water, and then placed in a freshly prepared 4 per cent. solution of phenyl-hydrazine hydrochloride. (This latter reduces the phospho-molybdate throughout the preparation, whether it be derived from inorganic or organic compounds of phosphorus, to a greenish-blue coloured compound.) After reduction the preparation was thoroughly washed with water, dehydrated, cleared, and mounted in balsam. As a control I at the same time and by the same method examined films of the coffin-lid crystals of ammonium-magnesium phosphate obtained from urine. I found in both cases that the crystals became disintegrated; but whereas in the latter case the films after treatment with phenyl-hydrazine hydrochloride became blue-green, the films with the crystals from the cerebro-spinal fluid remained colourless, nor could I distinguish microscopically any colouration save a faint yellow. Thus the chemical examination, repeated frequently, seems to negative the presence of phosphoric acid.

While it seems improbable from the solubilities above mentioned that these crystals consist of a salt of choline, Rosenheim's test[2] was carried out to throw light on this point. This test depends on the formation of brown hæmin-like crystals of choline periodide when substances containing choline are treated with a strong solution of iodine in potassium iodide. This test gave me a negative result.

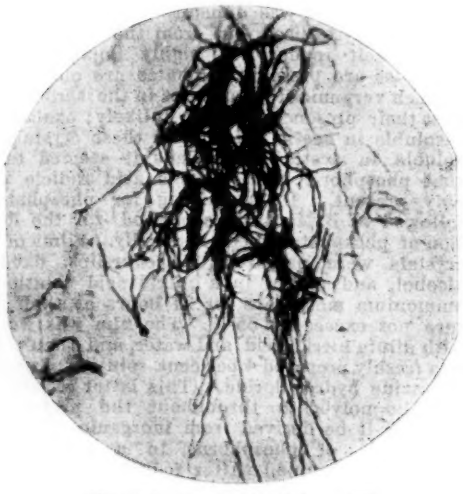
[1] A. B. Macallum: Der Nachwels und die Lokalisation des Phosphors durch mikrochemische Methoden, Ergebnisse der Physiologie, V., vii., 1908, pp. 632–645.

[2] Otto Rosenheim: Choline in Cerebro-spinal Fluid, Journal of Physiology, vol. xxxv., pp. 465–472.

These crystals resemble the Charcot-Leyden crystals and Böttcher's sperm crystals in the fact that they are doubly refractile and soluble in dilute acids and alkalies. They differ, however, by being probably in the rhombic system, whereas the Charcot-Leyden crystals are octahedral and Böttcher's crystals are hexagonal.[3] The Charcot-Leyden crystals are soluble also in hot water, stain with eosin (as do also the sperm crystals [4]), and are accompanied by an eosinophilia as in asthma. Böttcher's crystals have been demonstrated by Pöhl [5] to be the phosphate of an organic base (spermin). I failed to demonstrate the presence of phosphates in the crystals which I have described. Nothing definite is yet known as to the chemistry of the Charcot-Leyden crystals.

Scheiner considers that Charcot's crystals and Böttcher's sperm crystals are identical, notwithstanding Cohn's claim that these crystals differ crystallographically; the crystals described in this article seem quite distinct from either.

FIG. 3.



Microphotograph of streptothrix. × 1120.

The deposit, after careful microscopical research, showed a few extracellular Gram-positive cocci and an occasional large rod-shaped bacillary form. There was no evidence of meningococci. On culture on agar I obtained a growth of staphylococci and a few much larger colonies, round and opaque, which grew into the agar, having a cup-shaped base. They clung tenaciously to the culture medium, and it was exceedingly difficult to break the colony down so as to obtain a fine emulsion. On staining these colonies were found to be composed of a Gram-positive streptothrix, a microphotograph of which is shown in Fig. 3. I consider the bacillary forms seen on direct examination as probably small bacillary filaments of this streptothrix. An enforced absence from the laboratory prevented a further examination as to the cultural and pathological characteristics of this organism.

As I can discover no account of crystals such as I have described being previously found in the cerebro-spinal fluid I thought that this pathological finding was of sufficient interest to report.

[3] Cohn: Deutsches Archiv für Klinische Medizin, 1895, vol. liv., p. 514. [4] Sobotta: Atlas und Lehrbuch der Histologie, p. 178.
[5] Pöhl: Die Physiol. chem. Grundlagen der Spermintheorie, St. Petersburg, 1898.

I have to thank Professor W. St. Clair Symmers, professor of pathology, Queen's University, Belfast, for his assistance in searching the literature of the subject; Dr. J. A. Milroy, lecturer in biochemistry, for his advice in the chemical examination of the crystals; Dr. Dwerryhouse for examining the crystals morphologically, and Dr. H. P. Malcolm, demonstrator of anatomy, for the trouble he took in obtaining the microphotographs illustrating this article.

Belfast.

A CONTRIBUTION TO

THE BACTERIOLOGY OF THE URINARY TRACT IN CHILDREN.

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THIS paper deals with 106[1] catheter samples of urine which have been fully examined bacteriologically. At the outset it seemed advisable to make a bacteriological investigation of urines obtained from normal children. Although there are obvious objections to catheterisation in the case of healthy children, the difficulty is partially overcome by making use of the hernia and cleft palate cases awaiting operation in the surgical wards. A series of 19 catheter urines was in this manner collected. All specimens were collected by competent individuals and every possible precaution taken as regards instruments, patients, hands, and culture media, which last were incubated previously to use. Of these 19 specimens 11 were sterile after from 48 to 72 hours' incubation, whilst 8 grew an organism which was invariably a white staphylococcus.

Broadly speaking, this particular white coccus was found to acidify litmus milk (often only after some days' incubation) but not to clot it; to grow slowly on gelatin without liquefaction; to have no effect on neutral red broth anaerobically, and to acidify maltose. No change ever occurred in mannite, and a white colony was obtained on agar. Most likely the coccus is present in that portion of the urethra which is inaccessible to cleansing from the outside. In 5 out of the 8 positive cases the first broth tube used to receive the urine grew the coccus, while the second one employed remained sterile. This points to the presence of small numbers of organisms, and further suggests that they are picked up by the catheter in the deeper portions of the urethra and meatus and washed down through the eye of the instrument.

Infection by the Bacillus Coli.

In all instances the catheter specimen was collected in a sterile tube, transferred thence to broth and McConkey culture tubes, and 24 hours later neutral red bile salt agar and agar plates were made. All the coli organisms produced acid and gas in McConkey, maltose, mannite, lactose and dextrose, grew on gelatin without liquefaction, and formed a red colony on neutral red bile salt agar. The atypical behaviour of these bacilli is seen in regard to the production of indol, the fermentation of cane sugar, and the effect produced on litmus milk. These reactions in 43 different strains of urinary B. coli are summarised below.

The indol reaction was found present with great frequency after the organism had been grown three or four days in peptone water and using the paradi-

[1] At the time of writing the total has now reached 157, but the additional cases merely bear out the general results here recorded.

methylamidobenzaldehyde method. Possibly the absence of indol formation, so frequently recorded in B. coli isolated from the urinary tract, is due to the use of the less satisfactory nitroso-nitric acid test. All the litmus milk cultures were observed for a week or ten days, if no clot formation had occurred earlier.

Summary of Reactions.

Test.	No. of strains tested.	Result.
Action on litmus milk	43 ...	Acid and clot in 26; acid only in 17.
Peptone water—indol reaction ...	34 ...	Indol present in 33; no indol in 1.
Action on cane sugar...	27 ...	No change in 17; acid and gas in 10.
Action on neutral red broth	11 ...	All showed reduction.

The channels of infection.—For a discussion on this point reference must be made to papers by Hale White in THE LANCET and Nabarro in the *Practitioner*. Infections of the urinary tract by the colon bacillus may be roughly divided into: 1. Cases of colon bacilluria which are entirely latent or else present mild symptoms only, such as a certain degree of pyrexia. In such examples only a few leucocytes are present in an acid urine, although it may be teeming with bacilli. 2. The cases of frank pyuria with symptoms of cystitis, or it may be of pyelitis. Such patients may be the subjects of tuberculosis affecting the urinary tract, and generally show a considerable amount of pus in an acid urine. Most of the cases dealt with here belong to the first category, and only some half-dozen or so to the second.

Out of 43 cases of B. coli infection 7 were males (16·3 per cent.) and 36 females (83·7 per cent.). I favour the view that the infection is from without and due to a direct passage of the organisms from the anal orifice to the vulva, and thence upwards *viâ* the urethra to the bladder, &c. At the same time this hypothesis, while explaining the majority of instances of infection, will not cover them all, and the other possible routes cannot be entirely ruled out as some authors appear to think. The bulk of the patients were girls suffering from acute summer diarrhœa (with or without the added complication of œdema); in such, bacilli of the colon group and its congeners are known to be present in a state of exalted virulence within the alimentary canal. While it is not easy to say what particular organism of the typho-colon or the salmonella groups may be the cause of any case of acute enteritis in a child, it must be allowed that the colon bacillus, when present alone or in combination with some of the allied organisms, might easily gain entry to the bladder by direct extension in the female. Provided that the patient's resistance—i.e., the natural immunity—to the entry of pathogenic germs has been impaired by some intercurrent disease, this direct extension hypothesis would cover a majority of the female cases. The impairment of resistance seems to be an important factor, and it would help to explain the occurrence of colon bacilluria which I found in the following list of cases: diphtheria, lobar pneumonia, relapsing pneumonia, pneumonia with measles, migraine, tuberculous peritonitis complicated by measles, and miliary tuberculosis. Of course, a colon bacilluria is far and away most common accompanying some infective process in the alimentary tract, but it is not confined by any means to such cases. As regards the blood stream as a possible channel of infection, although many observers (including myself) have failed to get positive results from blood cultures, there is some experimental evidence in its favour, and Panton has recently shown that colon bacilli may be cultivated from the blood stream in certain acute infective conditions.

Examination of films.—An examination of stained films from the centrifuged deposit serves sharply to mark off the colon carrier from the pyuria cases with their very abundant leucocytes. Thus out of 40 cases of colon infection (17 of which were instances of acute summer diarrhœa complicated by œdema) from the medical wards, only 1 showed a true pyuria, while 2 others revealed numerous polymorphonuclear leucocytes with a slight deposit on centrifugation. Nineteen examples showed a variable number of bacilli, scanty leucocytes, or merely a few mononuclears; 6 showed neither cells nor organisms in the film, and the remaining 12 bacilli alone with no cells. It was usual in the colon carrier to find few or many bacilli associated with very scarce polymorphonuclear leucocytes.

Vaccine treatment.—The autogenous vaccine was used for 3 patients with bad pyuria on the surgical side. In all the bacilluria persisted, but the amount of pus was diminished and the clinical state underwent an improvement, which had not been noticeable previous to the use of vaccines. An examination for tubercle bacilli was made in all these cases, but none were found. Among the patients in the medical wards vaccine treatment was but little employed, and in the œdematous cases 3 to 5 minims of 1 in 1000 adrenalin solution either orally or hypodermically was particularly successful; in numerous instances alkaline treatment was used with good effect. In 24 patients the urine was repeatedly examined by culture to determine if it was sterile after the children had been some time under treatment. In 10 instances there was no bacilluria when the children left hospital, and in 4 not even a staphylococcus was grown.

It was not my experience to find that the bacillus present commonly underwent alteration during the child's stay in hospital. Five examples did, however, occur in which a B. coli gave place to a bacillus proteus or the reverse sequence obtained. The average stay in hospital of those children whose urine became culturally bacteria free was from three to six weeks. Those patients in whom the bacilluria persisted to some degree all left the medical wards practically well and with no pus in the urine. This contrasts with those few cases of the surgical type (and the possibility of a tuberculous infection in the background) referred to earlier in this paper.

In this investigation particular interest has centred round certain cases of acute enteritis in children, complicated by œdema, the majority of which were found to be subjects of a colon bacilluria. There is apparently no obvious connexion between the bacilluria and the œdematous state. 1. The colon bacillus may be cultivated from the urine of many severe cases of summer diarrhœa uncomplicated by œdema, as was demonstrated bacteriologically on numerous occasions. 2. A state of lowered resistance to infection, due to diseases other than acute enteritis, may afford an opportunity for the colon bacillus to effect a lodgment in the urinary tract. In four of the enteritis cases, which terminated fatally, neither necropsy nor the microscope revealed any renal or cardiac condition to which the œdema might be attributed. Naked eye, the kidneys showed very little, while microscopically there was merely cloudy swelling in the protoplasm of the cells lining the spiral and convoluted tubules.

One patient in the surgical wards presented renal changes of more interest. The case was pyonephrosis with colon bacilluria, and death was due to general peritonitis. Tubercle bacilli were not found in the urine, and there was no post-mortem evidence of tuberculosis. Both kidneys showed punctate hæmorrhages and were riddled with small abscesses. While the glomeruli were little affected in the convoluted tubules many cells had lost their nuclei, and the protoplasm was granular, broken down, and destroyed. The abscesses consisted of a limiting membrane of compressed renal epithelium bounding a collection of inflammatory cells, which was broken down into a granular detritus at the centre. These cell collections included a fair number of polymorphonuclears, but mononuclears predominated. In this group are included two cases of bacilluria due to Day's paracolon organism and one to the bacillus of Gaertner. Once also a case of enteric fever was detected through a bacteriological examination of the urine.

In three or four instances a bacillus which I am unable to identify was isolated. It was non-motile, Gram-negative, never liquefied gelatin, formed a white colony on neutral red agar, and gave no indol reaction. It grew without producing either acid or gas in maltose, mannite, lactose, dextrose, dulcite, McConkey, cane sugar, raffinose, and salicin. Some authors speak of a variety of B. coli termed "non-aerogenes." Its pathogenicity to animals has not been tested.

Infections due to B. Proteus Vulgaris.

Braxton Hicks, Dudgeon and Ross have all recently drawn attention to the rarely manifested pathogenic powers of this saprophyte. There are 19 instances in which B. proteus was cultivated from a catheter specimen. One of the patients had pyuria and quite a sharp attack of cystitis, but in none of the others were there any clinical symptoms pointing to the urinary tract. In this total were 8 cases of summer diarrhœa complicated by œdema, 3 others not so complicated, and the remainder included such varied disorders as constipation, bronchopneumonia, measles, and appendicitis. As regards sex distribution 10 were boys and 9 were girls, which is in contrast to the results obtained for B. coli. It was found that the cultural reactions of this group were extremely variable in the litmus sugar media; indeed, the chief diagnostic point lay in the isolation of a Gram-negative bacillus with the power of liquefying gelatin. Five strains gave an indol reaction out of 12 tested. Beyond the fact that this bacillus was found in certain cases of acute enteritis, the majority of which had œdema as well, it was of no interest.

The Presence of Staphylococci.

Staphylococci alone were isolated 25 times from pathological urines. The diseases concerned included œdema after enteritis (4), enuresis (2), uncomplicated acute enteritis (1), and other examples were multiple arthritis, acute mastoid, cystitis, acute nephritis, purpura, spasm of the sphincter vesicæ, pneumonia, and pleurisy.

The fact that staphylococci only were cultivated from four cases of œdema after acute summer diarrhœa and vomiting shows the need for caution in connecting this symptom in any way with the bacteriological state of the urine. As a rule, there is no reason to attach any importance to the presence of urinary staphylococci which give a coarse white colony on agar. The circumstance that staphylococci may be cultivated from control urines quite discounts their value as etiological factors in pathological conditions, as does also the great diversity of the pathological states in which they are found and their low degree of virulence. Some attempt was made systematically to examine these cocci upon a few media with the following results:

Gelatin slope... ...	19 strains: no liquefaction. 6 strains: liquefaction.
Litmus milk... ...	13 strains: acid. 10 strains: acid and clot. 2 strains: no change.
Maltose	All acid.
Mannite...	22 strains: no change. 3 strains: acid (usually slight).
Red broth	Out of 11 strains tested reduction occurred in 3.

In 7 examples which clotted milk there was partial or complete decolourisation as well. All these cocci gave a white colony on agar. Most of the cultures were kept a week under observation at 37° C. Lactose was acidified on every occasion when used. Raffinose, salicin, and inulin were also employed, but the results were too inconstant to be of any value. Out of the 3 strains attacking mannite 2 only produced slight acid formation after five days' incubation.

On reference to the table given by Gordon on p. 144 of his translation of Abel's "Handbook of Bacteriology" it was found that out of these 25 urinary white staphylococci 3 strains gave the reactions of S. epidermidis albus, 11 those of "a staphylococcus sometimes found on the skin," and 10 other strains were slightly atypical according to the Gordon tests. Most of these atypical examples conformed to the reactions of "a staphylococcus sometimes found on the skin," except that a clot was produced in litmus milk, usually after some days' incubation, and not in any case sooner than three days. The net result would therefore appear to be that these urinary white staphylococci are closely allied to the white staphylococcus of the skin. If the Gordon tests are applied with care and an absolute mechanical uniformity in results is not expected, they are decidedly valuable as a help in classifying the staphylococci.

In his researches on the bacteriology of the urine in rheumatoid arthritis Warren Crowe has isolated with great constancy an organism which has now finally received the name of Micrococcus deformans, and the cultural characters of which are now pretty well known. Outside the group of diseases to which Crowe has directed his attention I am not sure that the M. deformans is commonly found in the urine, but as regards the bacteriology of the urine in the class of case to which Crowe has devoted himself I have no experience, and must refer those interested to the original papers.

Shortly after I became acquainted with this new work a sample of urine from a child suffering with rheumatic pains, slight sore throat, and some tenderness together with swelling of the joints, was sent for examination. I communicated with Dr. Crowe, sending him the white staphylococcus isolated. He very kindly worked it out for me and we found that it was identical in cultural characters with M. deformans or staphyloid coccus A. From this point onwards all the urinary staphylococci obtained to the number of 14 were examined as to the nature of the colony produced on neutral red egg, with the result that only one proved to be M. deformans. The colonies from the remaining

13 examples on egg media were at first rose red, but soon had the appearance of a flat orange-coloured growth, which later on changed to pale cream or even to white after some days in the incubator. These growths were quite distinct from the flattened, deeply indenting rose-red colony proper to M. deformans and obtained in two of my cases. Crowe describes S. albus as rare in the urine and forming a vivid orange growth on neutral red egg. The use of neutral red egg seems to be the crucial test for the presence of M. deformans, as agar is useless for this purpose. Crowe hints that M. deformans may be a member of that group of white staphylococci which are encountered on the human skin. I had also come to a similar conclusion with regard to the white staphylococci isolated in the present series of urines after using the Gordon tests. Apparently the clotting and decolourisation of litmus milk[2] is not so sure a guide as the use of the neutral red egg medium, which was made up in accordance with Dr. Crowe's directions. The question requires further investigation, but at the same time some reasonable doubt may be entertained as to whether the M. deformans can be isolated so frequently from the urines of non-rheumatoid subjects, while it looks as if some variety of S. albus was fairly common.

In conclusion, I desire to thank collectively the staff of the East London Hospital for Children for permission to make free use of all their cases.

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[2] Dudgeon and Panton have described a diplococcus isolated from the urine having this cultural characteristic, THE LANCET, Dec. 16th, 1911, p. 1696.

UNIVERSITY OF MANCHESTER.—An eventful winter session has now been brought to a close. In the Michaelmas term there were no lectures on Wednesdays and Saturdays, but with the new year in the medical school the usual routine of lectures was restored. The senior medical students have been doing yeoman service in the infirmary, where the scarcity of residents has been felt.—Professor A. E. Boycott has transferred his services to London, and the University has found a successor in Henry Roy Dean, M.D. Oxon., F.R.C.P. Lond., professor of pathology in the University of Sheffield. It has not yet been determined when the new professor will enter on his duties, whether during the summer term or in October.—The University has issued a first and as yet incomplete list of past and present members of the University who are serving with the colours. The total number so far known to be serving is 765, made up as follows: members of the staff (42): army, 12 commissioned officers, 4 privates; R.A.M.C., 26 commissioned officers. Past and present students (723): army, 331 commissioned officers, 238 privates; navy, 12 commissioned officers, 17 privates; R.A.M.C., including A.V.C., 111 commissioned officers, 14 privates. The University has to regret several losses, including Captain Frank Forrest, R.A.M.C.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

LARYNGOLOGICAL SECTION.

Exhibition of Cases and Specimens.

A MEETING of this section was held on March 5th, Dr. W. JOBSON HORNE being in the chair.

Dr WILLIAM HILL showed a female patient, aged 25, with an Angeioma (bleeding polypus) at the anterior end of the nasal septum, for which eradication by surgical diathermy was proposed.

Dr. L. H. PEGLER showed X ray photographs illustratirg the thoracic appearances in a case of Left Recurrent Paralysis associated with Mitral Stenosis. The patient (deceased), a Jewish girl aged 19, went to the Metropolitan Throat Hospital in July, 1914, complaining of hoarseness on waking and vocal disability since the previous January, due to paralysis of the left vocal cord, which was fixed. She was admitted to the Brompton Chest Hospital on August 11th under the care of Dr. W. C. Bosanquet, who lent the photographs shown. She died at home four days after her discharge, having developed all the symptoms of acute laryngitis. On admission the girl, who had suffered formerly from rheumatic fever, complained of cough, pain in the left breast, and shortness of breath. A long presystolic murmur was audible at the apex, with thrill. Posteriorly, some râles at the bases of both lungs. The temperature remained at about 100° F. all the time; no tubercle bacilli in the scanty sputum. Dr. Dundas Grant by direct bronchoscopy found no abnormal pulsation. Dr. S. Melville X rayed the thorax on August 17th and reported: "Heart enlarged, purse-shaped. Above the left border is a well-defined shadow more or less in situation of right ventricle. Aorta wider than normal." In the absence of a necropsy the intimate relationship between the cardiac conditions and the recurrent paralysis must remain a matter for speculation. Sir StClair Thomson in his book, said Dr. Pegler, quotes Ortner as the first to describe this rare complication of mitral disease, and states that 37 more have been published since, but the instances are few in which the causal relationship has been established post mortem.—Dr. F. DE HAVILLAND HALL stated that he had seen a case in which he believed that the paralysis was caused by dilatation of the left auricle.—Sir STCLAIR THOMSON and Dr. DUNDAS GRANT pointed out that there were very few cases in which it had been proved that the paralysis was due to direct pressure of the heart.

Dr. PEGLER also showed four specimens of Superior Maxillæ exhibiting abnormal conditions of the nasal fossæ and maxillary antra.

Mr. CECIL GRAHAM produced a report from Dr. E. H. Kettle on the case of Tuberculous Inferior Turbinate shown at the last meeting, and also exhibited microphotographs with tubercle bacilli present.

Mr. G. SECCOMBE HETT showed a soldier who had been wounded in the face, the bullet having passed through both antra and caused suppuration which was afterwards cured by the Caldwell-Luc operation.

Sir WILLIAM MILLIGAN reported a case of Bone impacted in the Left Bronchus for six months which he removed by upper bronchoscopy with successful results. He also exhibited a microscopic section of a subglottic tumour (lymphangiectasis) invading the upper part of the trachea. It was pointed out that although tracheal growths are very rare, tumours of the subglottic region are much more common. He also showed photographs of a large dentigerous cyst of the lower jaw cured by operation.

Mr. H. L. WHALE showed a female, aged 52, suffering from a large Perithelioma of the Maxillary Antrum, the growth having recurred five months after operation.

Mr. C. W. M. HOPE showed two cases of Œsophageal Stricture in children aged 7½ and 18 months respectively. There had been no history of trauma in either case, and he considered that the condition was of the same type as congenital hypertrophic stenosis of the pylorus. Both children had suffered from daily vomiting since birth but were not emaciated. After treatment with bougies the vomiting ceased and soft solids could be swallowed for the first time.

Dr. DAN MCKENZIE exhibited an Œsophagus from a child, aged 2½ years, showing cicatricial stenosis caused by swallowing half a teacupful of a poison for bugs.

Mr. W. STUART-LOW showed a patient (seen at the last meeting) suffering from Epithelioma of the Tonsil, to illustrate the results which he had obtained by puncturing the glands in the neck with the diathermy needle.

Dr. DUNDAS GRANT exhibited a Rabbit's Vertebra which he had removed from the right lower bronchus by superior bronchoscopy.

Mr. W. M. MOLLISON showed a patient upon whom he had operated for Epithelioma of the Larynx, who was now suffering either from recurrence or from granuloma in the anterior commissure.—Sir FELIX SEMON stated that in such cases it should always be the rule to remove a piece for microscopical examination before undertaking a second operation, as in many instances the tissue was found to be non-malignant.

Dr. IRWIN MOORE showed a patient with an Early Naso-pharyngeal Growth, probably a vascular fibroma.

Mr. C. A. B. HORSFORD showed a patient with Early Epithelioma of the Vocal Cord causing slight impairment of mobility.

SECTION OF ELECTRO-THERAPEUTICS.

Exhibition of Cases and Specimens.

A CLINICAL meeting was held on March 19th, Dr. IRONSIDE BRUCE, President of the section, being in the chair.

Dr. E. P. CUMBERBATCH showed two patients whose malignant growths (of the tongue and cheek) had been cured by the use of diathermy, though both had been pronounced inoperable by ordinary surgery. The diseased areas now looked quite healthy. In reply to questions, he said he used a current of 1·4 milliampères, and general anæsthesia was employed. He described his technique.

Dr. C. RUSS showed two exhibits: (1) Bacteria Moving during Electrolysis; and (2) Changes Produced in Bacilli Coli after Electrolysis. There was a control slide from an ordinary case of coli cystitis and another showing the bacteria after several weeks' treatment of such a case, the elongation of the bacilli being plainly evident. There were also changes in the reaction to the Gram stain, showing there was an alteration in the chemistry of the bacterial envelope. Other slides showed the changed form of the colon bacilli due to the continuous passage of a weak current (1/15th of a milliampère) through the tubes containing the bacilli in a fluid closely approximating to that in the bladder. The lack of virulence of the changed bacilli was quite evident.—Dr. ETTIE SAYER described a case of Streptococcal and Pneumococcal Diarrhœa in which electrical treatment following the use of an autogenous vaccine resulted in a similar elongation of bacilli to that described by Dr. Russ.—Dr C. H. BROWNING discussed the question, alluding to the similar work of Dr. Ainley Walker at Oxford in the case of typhoid fever. The same attenuated effect could be brought about by means of inhibitory sera.

Mr. LINDSAY LOCKE demonstrated the removal of foreign bodies from the tissues by means of the Ironside Bruce X ray director and described the technique.

Dr. W. J. TURRELL exhibited some simplified electrodes for diathermy and static treatment, and Dr. W. J. S. BYTHELL showed a series of interesting skiagrams of bullet wounds of the skull. Some of the cases showed no cerebral or nervous symptoms, though the bullet was still *in situ* (resting on the tentorium in one case and embedded in the petrous bone in another). In others, where a shattering effect had occurred and there was much brain damage, death had occurred or was imminent.

Dr. ROBERT KNOX showed prints illustrating diagnostic points in a case of new growth of lung and one of malignant disease of the stomach. He also exhibited a remarkably good skiagram of a dermoid cyst containing hair, teeth, and bone.

Dr. ANNESLEY ECCLES showed skiagrams of a girl, aged 3½, who swallowed a foreign body, which was afterwards found to be a pin in the left bronchus, with the point directed upwards. Removal was effected by means of the bronchoscope, which was used with difficulty owing to the small size of the air passages.

Dr. STANLEY MELVILLE showed, by means of a selection of skiagrams, the value of "tidal percussion," as taught by Sir Robert Philip, of Edinburgh, as an early diagnostic sign of pulmonary tuberculosis. He had found it specially useful in screen examinations. He hoped members of the section would investigate the matter further.

Dr. J. A. CODD showed a useful modification of the tube-stand, which enabled a better application to be made to such regions as the axillæ and the root of the neck. He also demonstrated his method of making tracings of the shape of the stomach at various periods in different colours. The drawings were made to overlap and the colour distinction enabled a ready comparison to be made.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.

Etiology of Diphtheria.

A MEETING of this society was held on March 12th, Mr. HERBERT JONES, the President, being in the chair.

Dr. W. G. WILLOUGHBY read a paper on the Etiology of Diphtheria, in which he dealt with the incidence of the disease among similar classes of people living on different soils. After stating that Löffler's discovery of the specific bacillus of diphtheria enabled him to claim in 1884 that he had satisfied the three postulates of Koch with reference to the relation of a micro-organism to a disease, he maintained the fact remained that though we could not have the disease without the bacillus, yet many individuals harboured the bacillus without suffering from the specific disease, and until we knew what conditions other than the bacillus of diphtheria were necessary for the production of the disease, or what caused the bacillus to become pathogenetic, the disease would not be stamped out. He had frequently noticed that the cultures from an infected throat where the patient had no, or very trifling, symptoms were more free from secondary bacteria than the cultures from a severe case, and also that in cultures from cases waiting for discharge from hospital where the patient had been clinically well for some time, but where the bacilli were persistent, cultures were obtainable most free from other organisms and most perfect as specimens of diphtheria morphologically. Referring to the discussion at the Blackpool Congress of the Royal Sanitary Institute last year, when Dr. Hugh Snell gave a careful compilation of figures showing that apparently there was less diphtheria in those districts where institutional treatment was not adopted, he expressed the opinion that the true explanation of these figures was district immunity, and that diphtheria was of such varied incidence according to locality that one district could not be compared with another. Whatever was left undone in a non-diphtheria district there would obviously be less diphtheria than in a district where the disease was endemic. He then gave an interesting comparison of the relative incidence of about 1100 cases which had occurred during the past 20 years on houses of the same class and occupied by persons of about the same social position situated respectively on alluvium, on the beach, and on the chalk. Among the houses on the alluvium 46 per cent. were affected and 56 per cent. of the cases occurred; among those on the beach 24 per cent. of the houses were affected, and 21 per cent. of the cases occurred; while among the houses on the chalk 30 per cent. of the houses were affected and 23 per cent. of the cases occurred.

Dr. J. T. C. Nash expressed the opinion that second attacks with no clinical symptoms might possibly account for epidemics. He had found that there was no difference between the susceptibility of healthy and weakly children.

Dr. J. J. PATERSON said that in the East Berkshire district dampness of sites did not alone account for endemicity of diphtheria. In the past six or seven years most of the cases occurred in low-lying districts on the riverside where ground water was always high and fluctuating, but in another part away from the river where the ground was even more water-logged on account of an impervious crust or "pan" between soil and subsoil there were comparatively few cases, and these of a sporadic nature.

Dr. VEITCH CLARKE considered that the power of resistance of individuals was too often overlooked.

Dr. SIDNEY LAWRENCE advocated keeping a stock of anti-toxin for the use of practitioners at fire-stations.

Dr. CHARLES PORTER thought that far too much importance was attached to the taking of swabs from contacts.

Dr. ORR agreed that soil had a material effect on the spread of diphtheria through the dampness lowering vitality.

Mr. T. W. N. BARLOW said that in Wallasey swabbing was not methodically practised in hospital, and return cases were infrequent.

The PRESIDENT was not convinced that the general swabbing of children in an affected school had much effect in reducing the number of cases of the disease.

Dr. H. N. HARDING, Dr. H. J. CATES, and Dr. C. SANDERS also took part in the discussion.

HUNTERIAN SOCIETY.

Exhibition of Cases and Specimens.

A MEETING of this society was held at the Royal Hospital for Diseases of the Chest, City-road, E.C., on March 10th. The proceedings were all clinical, and full use was made of the resources of the hospital not only in clinical and pathological material but also for demonstrations, the new out-patient building with museums and lecture-room and well-equipped pathological laboratories, radiology and cardiology rooms being requisitioned.

Dr. A. C. JORDAN gave a fluorescent screen demonstration illustrating the examination of the lungs, heart, aorta, posterior mediastinum, œsophagus, and stomach.

Dr. A. W. STOTT gave a demonstration of the electrocardiograph, showing tracings from cases of heart-block, &c.

Dr. CARNEGIE DICKSON showed in the pathological department recent specimens from a case of Thoracic Aneurysm and a case of Sarcoma of the Left Chest, spreading from the glands at the left root. The wall of the left auricle had been destroyed on one side by the growth, which had in part replaced it. Both these specimens were compared with skiagrams taken during life. Microscopic preparations were shown illustrating cerebro-spinal meningitis, both the meningococcus and the meningeal leptothrix being demonstrated. Dr. Dickson also demonstrated the technique of the Wassermann reaction.

Dr. JORDAN exhibited a series of war injuries on the epidiascope, and Dr. D. BARTY KING exhibited some illustrations from Professor Ghon's book, of which he has just completed a translation. Dr. King also showed a skiagram to explain a form of recurring local broncho-pneumonia in children difficult to distinguish clinically from chronic pulmonary tuberculosis.

Dr. A. T. DAVIES and Dr. R. MURRAY LESLIE showed some interesting heart cases in the wards of the hospital. In two cases of paroxysmal tachycardia exhibited by Dr. Leslie marked benefit had followed specific treatment, instituted in each case after a positive Wassermann reaction had been obtained. Dr. Leslie also showed a man who suffered from two or three attacks of true angina pectoris every day—a disease scarcely ever encountered in hospital practice.—Dr. DAVIES showed two cases of complete Heart-block, the auricles and ventricles beating with independent rhythm. In both cases the rate of auricular and ventricular beat was obtained by counting in the X ray room, by the polygraph, and by the electrocardiograph. The results obtained by these three different methods agreed very closely.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF SURGERY.

Exhibition of Patients.—The Rôle of High-Frequency Current in the Treatment of Tumours of the Bladder.

A MEETING of this section was held on Feb. 26th, Dr. F. CONWAY DWYER, the President, being in the chair.

Mr. W. S. HAUGHTON, in showing a case of Double Congenital Dislocation of the Hip treated by the Lorenz Method, said the treatment extended a little over two years, which was about double the normal time required. The delay was due in the first instance to gastric attacks, and then to an attack of measles. Double dislocation cases always took longer to treat, as the stages had to be gone through more gradually. Skiagrams before the treatment and during its progress were exhibited, and attention was directed to the relation of the head of the bone to the acetabulum, the development of the bone, the development of the femur, and the development of the acetabulum.

Mr. W. C. STEVENSON showed a similar case treated by the same method. He said that the left hip was easier to reduce than the right, and it was also found easier to keep in position. The right hip had only recently been taken out of plaster. Massage treatment was now being carried out in order to develop the strength of the leg.

Mr. SETON PRINGLE, in showing a case of Arthroplasty of the Knee for Bony Ankylosis, said he believed it was the first one of the kind done in Dublin, and it had been a hopeless failure. The man, some two years ago, had accidentally stuck a penknife into his knee-joint. The joint became septic, and nine months afterwards he had bony ankylosis, with the leg almost at a right angle. Mr. Pringle had been reading of Murphy's work, and he decided to try arthroplasty. The technique was carefully followed. The essential points of the operation were to remove the old articular surface and remodel the bones, and then to turn in from the tibia and femur flaps to cover the bones. The leg was then put up with an extension of 20 lb. on it for from three to five weeks, after which time the patient was allowed to develop active movement. When the patient was permitted to leave the hospital he had a fair amount of movement in the joint. He wore a splint and used crutches for some time, but about four months after operation he gave the joint a wrench. There was now very little movement in the joint, and it was very painful. X ray photographs of it before and after operation were shown. He believed the operation could be done with a successful result. Murphy had not published a long list of results, but stated that a large number of cases did well, and that others did not do well.—The PRESIDENT remarked that the operation was very new in Dublin, and the evidence furnished in this case was valuable.

Mr. ADAMS A MCCONNELL read a paper (illustrated by intravesical photographs) on the Rôle of the High-frequency Current in the Treatment of Tumours of the Bladder. He had treated several cases by this method since he learned the technique from Beer in New York three years ago. After relating the histories of four cases, and illustrating the course of the treatment by intravesical photographs and by radiograms, he came to the following conclusions. The high-frequency current is the method of choice for the treatment of vesical papillomata which are small in size, apparently benign in nature, and in patients who are not good subjects for an anæsthetic; it relieves the symptoms and checks hæmorrhage from inoperable carcinomata of the bladder. It may be used with advantage as a preliminary to operation in patients anæmic from much bleeding. After operation it should be used to remove recurrent growths as soon as they can be seen with the cystoscope. He advocated the removal of villous tumours by operation and routine cystoscopic examination at intervals of a month for some years afterwards. It was irrational to wait for symptoms before making a diagnosis of recurrent growths, for papillomata may remain in the bladder for long periods without producing hæmorrhage. Mr. McConnell demonstrated the working of the apparatus.—The PRESIDENT said he believed this to be the first communication on the treatment of the bladder by this method. The surgical treatment of these cases was not satisfactory. He thought Mr. McConnell had brought out very clearly the great value of this treatment and its limitations not only for the treatment of tumours, but for their after-treatment.—Mr. PRINGLE had treated one patient by this method whose tumour occupied practically two fields of the cystoscope, and it was now over a year since the treatment, and there was as yet no recurrence. The treatment did not disturb the patient and did not cause pain. He would advocate its use in all cases of clinical epithelioma as a curative measure, not as a pre-operative method.—Mr. C. A. BALL, with regard to the question of recurrence of vesical tumours after operation, mentioned a valuable suggestion—i.e., washing out of the bladder with an antiseptic strong enough to kill any cells that may be left after the removal of the tumour. This, he thought, might diminish the possibility of recurrence. He considered that a tumour might be present for a long time before it produced bleeding.—Dr. W. M. CROFTON asked if radium tubes had been used for treating vesical tumours, as it struck him that they might be malignant.—Mr. A. J. MCA. BLAYNEY said that the ease of the transperitoneal operation depended upon the constitutional habit of the patient. It was easy in thin subjects but difficult in fat ones. The high-frequency method should be recognised as the one for dealing with papillomatous tumours.—Mr. MCCONNELL replied.

Reviews and Notices of Books.

Essentials of Human Physiology.

By D. NOËL PATON, M.D., B.Sc. Edin., F.R.C.P. Edin., F.R.S., Professor of Physiology, University of Glasgow. Fourth edition, revised and enlarged. London and Edinburgh: W. Green and Sons, Limited. 1914. Pp. 557. Price 12*s.* net.

ABOUT seven years have elapsed since the third edition of this work was issued. The number of pages has been increased from 477 to 557 and the figures from 181 to 213, some of these having with advantage been redrawn; some of the sections have been rewritten, others rearranged; and greater prominence has been given to those parts of physiology which bear more directly upon medical and surgical practice, while there are references to the disturbances of function which occur in morbid conditions. The importance of practical work is rightly emphasised, and in the text references to this matter are constantly met with. We take it that other publications by the author deal with this aspect of the subject.

This edition is practically on the same lines as the previous ones, and the schematic diagrams are more or less those that most teachers of physiology sketch on the blackboard during lecture. Many are simple and effective, and the author has done well to increase their number. Too elaborate diagrams obscure what simple diagrams make clear. In the reference to calcium salts and blood coagulation it might be well to state that the oxalates to be added are soluble oxalates. Reference to the fungiform papillæ of the tongue seems to be omitted. The statement that the parotid "opens on the side of the cheek" seems rather vague, and so is the following: "On each side between the mouth and the pharynx is the tonsil." The formula of cholesterin—in this edition cholesterol—is given as $C_{26}H_{43}OH$. Other observers give $C_{27}H_{37}OH$. In connexion with the reference to jaundice it might be well to state that there are other causes besides the one mentioned. In the summary of the functions of the liver nothing is said about its relation to blood clotting. We are glad to see that dietetics and foodstuffs generally and their metabolisms are dealt with in a lucid and practical manner. A much fuller account is now given of the nervous and chemical regulators of metabolism commensurate with the advances in this very practical field of study. Just a little over 20 pages are given to excretion by the kidneys, and the urinary tests are practically omitted, as the tests for the various constituents of the urine must be studied practically.

This edition is a decided improvement on its precursors, and gives a fair, all-round, lucid, and attractive exposition of the so-called "essentials" of physiology in a manner which will appeal to students.

Dreams.

By HENRI BERGSON. Translated, with an introduction, by EDWIN E. SLOSSON. London: Fisher Unwin. 1914. Pp. 62. Price 2*s.* 6*d.* net.

THIS is a translation of a lecture on the theory of dreams which Professor Bergson delivered before the Institut Psychologique on March 26th, 1901—i.e., some 14 years ago. It has not, apparently, been altered by him in any way, though in a footnote on page 39 he refers (1913) to Professor Freud's work and to the development of methods of psychoanalysis in recent years.

Professor Bergson shows first that external stimuli of various sorts, visual, auditory, tactile, &c., impressions which pass unperceived in the waking state, reach the mind and form the materials of our dreams, but do not suffice to produce these dreams, mainly because they are vague and indeterminate. He asks, "What is the form that will imprint its decision upon the indecision of this material?" and answers, "Our memory." Memories weave the web of our dreams, old forgotten memories, fragmentary it may be, memories of objects perceived unconsciously during the distractions of waking life. In this latter state memories are as it were organised, closely connected with the situation, occupation, or action of the moment. A thousand other memories are crowded out, but let the individual become disinterested in his situation or action, let him sleep, in other words, and these memories "arise from the depths: they rise, they move, they perform in the night of unconsciousness a great *danse macabre*. They rush together to the door which has been left ajar." Not all, of course, emerge from unconsciousness, but those emerge which can assimilate themselves with the external and internal sensations that are then reaching our sleeping mind, and when this union is effected between the memory and the sensation we have a dream.

Professor Bergson believes that all our memories, good and evil, pleasant and unpleasant, are thus stored away, and his conception is a wider and more philosophical one than that of Professor Freud, for whom the dream is symbolic of desires or fears which we refuse ordinarily to admit to consciousness, inasmuch as they are either painful or morally repugnant. In his preface the translator briefly indicates the divergence between the two theories in this respect.

Considerations of space make it impracticable to enter on a detailed criticism of Professor Bergson's little book. We feel that he is unnecessarily landing himself in difficulties when he asserts that the creative dream, so-called, is not really a dream, or that that part of ourselves which then labours is not the same as that which sleeps. It may be questioned, further, whether in waking life our memories of the moment inevitably derive from what we are then thinking or doing; but much of the meaning of the author's distinction between waking and dream processes depends on the assumption that this is so. The volume is characterised by that lucidity of thought and expression and grace of style that we have come to associate with the work of its distinguished author.

Recreations of a Physician.

By A. STUART M. CHISHOLM. London and New York: G. P. Putnam's Sons. 1914. Pp. 328. Price 7*s.* 6*d.* net.

Dr. Stuart Chisholm, an American medical man, gives us in his "Recreations of a Physician" a delightful series of ten essays on subjects so varied as Specialisation, Physicians as Men of Letters, Banquo, the Symbolism of Names, Royal Authors, the Inherent Spirit of Medicine, Translations of Horace, Some Features of the Science of Medicine in the Seventeenth Century, the Picard in Fiction, and the Prevention of Disease. In the essay on Horace the author's graceful translations of *Jam Satis Terris* (I. 2) and *Quis desiderio* (I. 24) are worthy of notice. They illustrate, however, in places the extreme difficulty of accommodating the rhythm of a tongue that knows not quantity (in the classical sense) to the requirements of metres that depend entirely on quantity for their swing. For

example, the dactyl in the lesser Sapphic Ode hardly comes trippingly from the tongue in such an English line as—

Which in | Persian | warfare would | better | glisten

Unless, indeed, it were hideously slurred—

Which in | Persian | warfer 'ud | better | glisten.

The corresponding double choriambus of the third Asclepiadean Ode, however, reads better—

Who shall | measure our tears | who be ashamed | to grieve.

We note a curious error on p. 21, where St. Andrews University, Edinburgh, is mentioned. We suppose the error arose from the association of St. Andrews with Edinburgh in Parliamentary representation.

There are points in the article on Specialisation to which exception must be taken. It is surely hardly correct to say, as the author does (p. 5), that while scissors and forceps were discovered in excavations at Pompeii, "the only knife known to the early anatomists was the razor. ..... The invention of the scalpel was due to either Fabricius or Cæsalpinus, both teachers of anatomy in Padua in the latter part of the sixteenth century." In his "Surgical Instruments in Greek and Roman Times" Dr. J. S. Milne devotes an entire chapter to the knives used by Greek and Roman surgeons, the various forms of which, including scalpels, bistouries, fleams, and lancets, are profusely illustrated. Many specimens are to be seen in the British and other European museums. In the Wellcome Museum of History of Medicine, for instance, are two undoubted bronze Græco-Roman scalpels. Plate IV. in Dr. Milne's book shows also an ex-voto tablet now in the museum at Athens which was found on the site of the Temple of Æsculapius on the Acropolis. On this tablet is carved an open surgical dressing-case that looks remarkably modern, and contains besides curved and straight bistouries an instrument apparently having a tenaculum at one end and an aneurysm needle at the other. A much more serious matter is the author's revamping (p. 5) of the old, widely disseminated, but now discredited story that Pope Boniface VIII. in his Bull *De Sepulturis* issued a decree against dissection to which is attributed the supposed antagonism of the ecclesiastical authorities to practical anatomical study. The Bull itself completely negatives the idea that it had any reference to anatomical study, and the subsequent history of events shows that it had no influence thereon. It is remarkable how erroneous ideas, originated sometimes out of pure malignity, sometimes out of ignorance more or less culpable, will persist and be reiterated, presumably in good faith, long after their foundations have been completely demolished. Dr. Chisholm also repeats the story of the persecution of Vesalius by the Inquisition, which it has been alleged led to his ill-fated pilgrimage to the Holy Land. In a monograph by Dr. G. Matheson Cullen, recently reviewed, both these particulars in the life of Vesalius will be found fully dealt with.

La Stase Intestinale Chronique.

Par le Docteur E. SORREL, Ancien Interne, Lauréat des Hôpitaux de Paris et de l'Hôpital Maritime de Berck-sur-Mer. Paris: G. Steinheil. 1914. Pp. 252.

IN this country there has been much discussion on the views which were first brought forward by Sir Arbuthnot Lane on the importance of chronic intestinal stasis and the appropriate treatment for this condition; in other countries many have definitely adopted the view that this condition is productive of serious conditions. In the British Isles the opinion appears to be steadily gaining ground that the importance of the condition has been but little overrated, and that operative treatment offers in most cases the best procedure. In France very little has been written on this subject, and the book before us is the first in that country to be devoted entirely to chronic intestinal stasis. The author accepts practically in their entirety the views which have been so ably advocated by Sir Arbuthnot Lane; he discusses the anatomy of the parts concerned, the etiology of the stasis, the symptoms and the treatment; and he concludes his treatise with a large number of cases of the condition, for the most part culled from medical literature, but also containing several cases which have been under his own care. His conclusion as to the treatment may be summarised as follows: If adhesions which interfere with the onward passage of the intestinal contents are few in number they may be divided, but in all other cases one form or another of intestinal anastomosis will be required. A useful bibliography is appended.

The book is an earnest study of the subject.

LIBRARY TABLE.

Transactions of the National Association for the Study of Pellagra. Report of the Second Triennial Meeting. With illustrations. Columbia: The R. L. Bryan Company. 1914. Pp. 409.—The second triennial meeting of the American National Association for the Study of Pellagra was held at Columbia, South Carolina, in October, 1912. The time that has elapsed since the papers were read and their publication in this report in 1914 has robbed some of them of the interest and freshness that they possessed two years ago. Nevertheless, the contributions now printed are, on the whole, of value, and some of them add to our knowledge of the subject. Dr. Rupert Blue, late Surgeon-General of the United States Public Health Service, gave an address on the problem of pellagra in the United States, and Dr. J. W. Babcock, President of the association, contributed a paper in which he discussed the question of how long pellagra has existed in that country, and expressed the opinion that it must have been present in some of the States as far back as 1828. Dr. C. H. Lavinder, of the United States Public Health Service, who is a well-known expert on pellagra, and who has conducted official investigations concerning the disease, supplied a paper on its prevalence and geographical distribution in the United States, and in this he mentioned that within the last six years (up to 1912) at least 30,000 cases had come under observation. Dr. R. M. Grimm, a member of the same Government service, wrote on some facts in the epidemiology of the disease. Among other contributors were two well-known London authorities on the subject—namely, Dr. F. M. Sandwith and Dr. L. W. Sambon. The former discussed the question, Can pellagra be due to a deficiency of nutrition? and the latter, being unable to attend the meeting, sent a paper on some special points of epidemiological interest in pellagra. Several distinguished experts from the continent of Europe also read or sent contributions, and among them may be mentioned Dr. B. Gosio (Rome), Dr. G. Antonini (Milan), Professor V. Babes (Bucharest), Dr. Jean Nicolaidi (Paris), and Dr. Umberto Grillo (Udine, Italy). Some of the

remaining contributors dealt specially with the local history of the disease, its diagnosis and treatment. The volume furnishes a good deal of interesting information on the various aspects of the disease.

The Voyages of Captain Scott. By CHARLES TURLEY. With an introduction by Sir J. M. BARRIE, Bart. London: Smith, Elder, and Co. 1914. Pp. 440. Price 6*s.* net.—This excellent little volume is a compressed edition of "The Voyage of the *Discovery*" and "Scott's Last Expedition," prefaced by a charming introduction by Sir J. M. Barrie, which gives an account of Scott's boyhood. It is just the book to give a boy, especially at this time, when, to use Lord Beaconsfield's fine phrase, "The youth of a nation are the trustees of posterity." For this is a story of endurance under inconceivable hardships, of a long-sought-for goal at last arrived at, of cheeriness, good fellowship, and every quality necessary to make a nation strong. In Scott's own words, "The combination of individual effort for the common good has achieved our results, and the absence of any spirit of self seeking." There are few accounts of travel more pathetic than Scott's simple notes of the homeward marches on the last journey. Here is the last day's note: Two of the expedition were dead, Evans, who died in his comrade's arms, and Oates, who dragged his weary body out into the blizzard so that he might not be a further burden. Evans died on Feb. 17th, Oates on March 16th, and on March 29th Scott wrote (they had been confined to their tent with a blizzard blowing ever since March 19th): "I do not think we can hope for any better things now. We shall stick it out to the end, but we are getting weaker, of course, and the end cannot be far. It seems a pity, but I do not think I can write more." And that was the end. When the search party arrived in the following summer they found in the tent besides the diary sundry letters, among which were two, one to the wife of Dr. Wilson and one to the mother of Lieutenant Bowers, which in the midst of the long-drawn agony Scott had managed to write.

The Prescriber's Formulary and Index of Pharmacy. By THOMAS PUGH BEDDOES, M.B., B.C. Cantab., F.R.C.S. Eng. London: Baillière, Tindall, and Cox. 1914. Pp. 132. Price 2*s.* 6*d.* net.—The second edition of this handy little pocket book, now before us, has been adapted to the new Pharmacopœia. The apothecaries' measure is, however, retained, with such variations from the former edition as are necessary to make them conform to the metric doses in the Pharmacopœia. The internal and regional remedies are now preceded by a synopsis of the alterations in the Pharmacopœia, and followed by a classified list of drugs arranged under their therapeutic properties and a section on the treatment of poisoning.

JOURNALS.

The Journal of Physiology. Edited by J. N. LANGLEY, Sc.D., F.R.S. Vol. XLIX. No. 3. Feb. 25th, 1915. Cambridge University Press. Pp. 113–146. Price 2*s.* 6*d.*—The Influence of Temperature on the Secretion of Sweat, by J. M. O'Connor. The experiments were made on the foot of cats anæsthetised with 1–2 grammes ethylurethane per kilo, given by the mouth. The foot was enclosed in a special apparatus through which dry air—about 1½ litres per minute—was sucked. The amount of water was determined by absorption in sulphuric acid. To determine if the loss of water was an active or a passive process the effect of atropine injections was observed, as well as section of the sciatic nerve. The loss of water in the normal anæsthetised cat seems to be passive, and there does not appear, under the conditions adopted, to be an active secretion of sweat, except under special conditions of temperature. The author concludes that (1) the normal loss of water from the foot of the cat is a passive process; (2) active sweating appears in the cooled anæsthetised animal (*a*) when the body temperature is raised to about normal, or (*b*) when the subcutaneous temperature reaches about 43° C. The result points to the conclusion that the former is a protection against a rise of temperature of metabolic origin, and the latter a reflex protection against a local rise in skin temperature.—Observations on Anæsthesia by Phenyl-ethyl Malolyl Urea, by W. L. Symes. This substance is advertised as a powerful hypnotic under the name of luminal. Its sodium salt, which is freely soluble in physiological saline, yields an unstable solution. This drug, dissolved as required, was used to obtain uniform anæsthesia for prolonged periods and without marked diuresis. Animals have been kept unconscious for various periods up to 18 days. Most of the experiments were made on cats and a few on rabbits, the latter being somewhat less susceptible. The results may be summarised as follows: With cats, for experiments lasting 3–5 hours, a subcutaneous dose of 0·2 gm. luminal per kilo is usually sufficient and safe. Except with old cats, anæsthesia is complete within one hour. Since the maximum effect only is produced, 0·15 gm. per kilo may be given subcutaneously or by the mouth in the evening, and if necessary an additional 0·5 gm. per kilo on the following morning 10–20 minutes before commencing the experiment. Cats under luminal are markedly poikilothermic. Unless they are warmed their rectal temperature may fall below 30°; if they are overwarmed it may reach 43° C. without warning from change in respiration. Cats may, with care, be kept unconscious for days and recover completely. Rabbits are conveniently and rapidly anæsthetised by intravenous injection of a 10 per cent. solution.—Contributions to Physiological Climatology (Part II.), by W. A. Osborne. This is a continuation of a research published in 1910 in the *Journal of Physiology*, in which it was shown that the skin is a moist surface and evaporation from it will be determined in large measure by the physical state of the air, its temperature, humidity, and movements. The present research was carried out in the summer (Australian) of 1912–13 by the methods already used by the author, with the addition of anemometric readings. It was found that despite varying humidity and velocity it is the temperature of the air, under the climatic condition of the experiments, which is the leading factor in skin evaporation.—On the Alleged Influence of Adrenalin and of the Sympathetic Nervous System on the Tonus of Skeletal Muscle, by Yas Kuno. After referring to the two kinds of nerve ends in voluntary muscle, one in connexion with medullated and the other with non-medullated—probably sympathetic—nerve-fibres and their probable physiological significance, the author describes the nature of his experiments, which were made on the excised sartorius of Rana esculenta. The sartorius was placed in a Keith Lucas muscle trough, by means of which the muscle can be excited and its contraction registered while immersed first in about 50 c.c. of Göthlin's modification of Ringer's fluid. After a certain time the trough was emptied and refilled with a similar fluid containing varying doses of adrenalin. The author finds that adrenalin up to the strength of 6 : 100,000 has no appreciable influence on the curve of contraction of the sartorius of the frog. The tonus of the hinder extremities is not altered either by the injection of adrenalin or by division of the rami communicantes, whereas the loss of tonus in frogs after division of the anterior roots of the spinal nerves is always marked by a relaxation of the muscles of the affected side. Muscles which are still in connexion with the spinal cord show on loading a gradual increase in length which may last 30 or 40 minutes. This phenomenon is best marked in "cold frogs." Section of the rami communicantes does not alter the rate at which this takes place, but the phenomenon is practically abolished by previous division of the anterior roots. The muscles of a "cold frog" which are still in connexion with the spinal cord show a marked contraction remainder after each twitch due to indirect excitation. The contraction remainder gradually disappears. Section of the rami communicantes does not alter this phenomenon, but section of the anterior roots almost abolishes it.

THE LANCET.

LONDON: SATURDAY, MARCH 27, 1915.

Shell Explosions and the Special Senses.

OF the many interesting and important types of case which are beginning to emerge from the welter of warfare, as conducted by modern methods to the accompaniment of terrific shell explosions, one is specially deserving of study—namely, the type in which there is traumatic diminution or abolition of function of one or other of the special senses. Data concerning the effect of shell explosions upon taste and smell have not yet been forthcoming in sufficient detail for any conclusions to be drawn; and in any case we should not expect it to be as immediate in its manifestations as the effect upon sight or hearing, and reference will therefore be made mainly to cases of traumatic amblyopia or amaurosis and traumatic deafness. Clinically and pathologically, several groups may be distinguished. There are, firstly cases where the phenomena seem to be the result of inhibition of function, such as is observed when stimulation is intense and prolonged. It is well known, as Dr. JAMES NIVEN reminded his audience in a recent address on the Effect of Noise on Health, delivered before the Manchester Statistical Society, that boilermakers, riveters, blacksmiths, and people working on railways, after a time become deaf to certain sounds as a result of prolonged monotonous noise, especially if it is interrupted rather than continuous. Those terminals of the auditory nerve apparatus which respond to notes of a certain pitch are over-stimulated and their function inhibited, just as workers in snuff mills soon cease altogether to respond to the recurring stimulus of irritating particles on the nasal mucosa. It is quite possible that much more concentrated and rapid stimulation may produce the same effect. Blinding of the retina by direct sunlight is responsible for a series of cases after every big solar eclipse, where the observer has failed to protect his eye sufficiently. It is, then, a general experience, whatever be the sense avenue involved, that from over-stimulation the nerve elements concerned become fatigued and then paralysed. The question at once arises whether there is any actual organic change in such nerves and nerve mechanisms, entailing more or less permanent defect of function, or whether, in the absence of structural damage, this "fatigue paralysis" will disappear. In any given case it may be difficult to decide, but there is little doubt that, both for the eye and ear, severe and concentrated over-stimulation may lead to permanent mischief.

Not always to be distinguished from this group is a second class of case where the disturbance of function is supposed to result from a "commotio," a sudden jar to nerve elements, a "shock," throwing mechanisms out of gear either peripherally or centrally. As there is difference of opinion as to the presence or absence of a genuine organic change (however slight) in cases of "railway spine," of traumatic neurasthenia of spinal type, so is it probable that there will be division of opinion as to the pathology of "commotio" of the special senses. It may be part of a general commotio cerebralis, or it may be local and peripheral, e.g., a labyrinthine commotio. A number of cases, both civil and military, have been recorded at one time or another where the impact of a projectile has reduced a segment or more of the spinal cord to pulp, though the dura is found to be intact and the bullet has not directly touched either dura or cord. Cases have also been recorded where a heavy fragment of a shell, striking the neck, has produced death by sudden and violent dispersion of the cerebro-spinal fluid within the tough dura, structurally damaging and paralysing the adjacent medullary centres. A sudden and powerful commotio in such cases can effect the most striking organic change. Now it is at least conceivable, and in the opinion of some it is possible, that a sudden jar to nerve elements produced by the violent explosion of a shell in the closest proximity to eye or ear may effect an organic change, very much less in degree, no doubt, but still of the same nature as that above described. A third class of case is clearly of the nature of traumatic hysteria. In regard to this group also, however, it may be questioned whether there may not be some organic basis on which the neurosis is implanted, whether the "shock" does not effect a change the functional expression of which is identical with or comparable to the functional disturbance that we know as hysteria.[1]

As illustrating the suggestive way in which this subject may be worked out, reference may be made to a meeting of the Académie de Médecine of Paris on Jan. 19th, when M. LANNOIS and M. CHAVANNE communicated an important paper on total deafness due to the sonorous vibrations produced by shell explosions, of which they had observed 50 cases since the beginning of the war. They attributed the deafness to different conditions. In some cases they considered that it was the result of a kind of inhibition, such as is observed when the olfactory or optic nerve has been submitted to too intense or too prolonged stimulation. The deafness due to this "fatigue paralysis" disappeared in some days. In other cases the ear is not at fault and the deafness is a symptom of cerebral concussion. In still other cases there are hystero-traumatic phenomena, which may take the form of deafness, deaf-mutism, or deaf-mutism and blindness. Such manifestations are relatively rare. They were observed especially in soldiers who had been more or less buried in the

[1] The Study of Shell Shock, by Captain C. S. Myers, R.A.M.C., F.R.S., THE LANCET, Feb. 13th, 1915, p. 316.

earth thrown up by the bomb. These different forms were found both isolated and combined into complex types. They also were sometimes accompanied by labyrinthine concussion. The pathology of labyrinthine concussion is ill-defined; there may be simply a labyrinthine commotio, or there may be visible lesions such as hæmorrhage. Labyrinthine concussion may present itself under different clinical aspects. It may coexist with fracture of the skull, the symptoms of which are added to those of the concussion. The fracture may pass through the mastoid and may be accompanied by a lesion of the labyrinth. Labyrinthine concussion may also be accompanied by a rupture of the tympanic membrane. The concussion is frequently attended by loss of consciousness, which is followed by the triad vertigo, tinnitus, and deafness. Nausea and vomiting are rare. All forms of vertigo occur. There may be vertigo in bed, the patient feeling that he is revolving on a horizontal or vertical axis, or there may be loss of equilibrium when standing or walking. The vertigo usually disappears quickly, but the tinnitus is more persistent. The deafness, which is often total at first, frequently remains considerable, the patient hearing only when shouted at. It may be unilateral or bilateral. Bone conduction is diminished and the superior limit of audibility of high notes is lowered. This is the most characteristic sign, and considerable lowering is of bad prognostic significance. The observations of M. LANNOIS and M. CHAVANNE are of great practical interest at this moment.

Housing in Agricultural Districts.

THERE are few problems more difficult, and in some ways few more discouraging, than that of the amelioration of the conditions of working-class housing in agricultural areas in many parts of England. People are apt to regard these areas as identical with "rural districts," and to judge the position from facts and figures relating to the latter. Unfortunately, however, most of the rural districts which show housing progress, in the form of increase in new cottages and of demolition or substantial repair of those which have become unfit for human habitation, are districts in the neighbourhood of large towns or of mining or industrial centres, where the housing improvements have been for the benefit of everyone but the agricultural labourer. Exceptions can, of course, be found on large estates, especially where the owner does not depend mainly on farming for his income; something has been done here and there in connexion with small holdings, and occasionally a rural district council has been induced to provide a few cottages. But for the farm hand or shepherd the total change is small, and in many parts, particularly in the south and west, dwellings of bad original construction are now worn out and past any satisfactory improvement at reasonable cost, while no new building is to be expected either from private enterprise or from local authorities. Damp, dark, overcrowded and ill-ventilated cottages contribute to tuberculosis, rheumatism, and other conditions which naturally make a direct appeal to the sanitarian. A still more serious result, however, in districts where such houses are the only dwellings available to the agricultural population is their undoubted effect in emptying the country of its more efficient stock, a process which has been actively going on for many years, and does not seem likely to diminish.

A recent book on "Rural Housing," by Dr. W. G. SAVAGE, medical officer of health for the county of Somerset,[1] deserves attention in connexion with these questions. Dr. SAVAGE discusses the causes of the failure of the various Housing Acts, including that of 1909, which in some directions was a considerable advance on its predecessors, to meet the housing requirements of agricultural areas through the action of the local authorities. One of the most important of these causes seems to be the want of central driving power. Many county or district councils would not hesitate to carry out duties laid on them by Parliament if they were subjected to a really effective pressure from the central authority. If neglect entailed their supersession or a prosecution, they would have a conclusive answer to local objectors. The Local Government Board, however, is usually unable or unwilling to go beyond remonstrances, and is probably hampered by its functions as a legal court of appeal in cases of dispute between the local authorities and the property owners. Possibly, as Dr. SAVAGE contends, too much of the direct administration has been put on the rural councils, and too little on the county councils. It is now also generally admitted that under any system dependent on local government the local authorities must receive substantial Government subsidies if they are to build country cottages on a considerable scale. The housing grant proposed by the Government early last year has, however, been dropped as a result of the war, and it is questionable whether the proposals then made took sufficient account of the special requirements of the agricultural districts.

Dr. SAVAGE'S book, besides giving a valuable study of such questions as we have referred to, contains much useful practical advice as to the conditions which justify houses being represented as unfit for human habitation, and the steps which can be taken to bring unsatisfactory houses up to tolerable standards of healthiness. In these matters, as well as in respect of the construction of new labourers' cottages, it will be of special service to medical officers of health, on whom at present rests the burden of making the best use possible of the existing administrative position. At the end of the war probably many men who return will have acquired a distaste for town life and would prefer agricultural work in England to emigration if it could be undertaken under tolerable conditions of comfort, of which a reasonably contrived cottage with a little land is perhaps the chief.

[1] Rural Housing. By W. G. Savage, B.Sc., M.D. Lond. With 32 illustrations. London: T. Fisher Unwin. Pp. 297. Price 7s. 6d. net.

Annotations.

"Ne quid nimis."

THE PRESCRIBING OF NARCOTIC DRUGS.

DURING the last year or two legislative measures designed to restrict the use of narcotic drugs to legitimate purposes have been enacted in many countries, but none of them is so stringent or likely to be so effective as an Act which came into force in the United States of America on March 1st, 1915. This Act, which is known as the Harrison Law, is the most important measure of legislation affecting the sale of poisons that has ever been enacted in America, and there is nothing in English law which is comparable with its provisions. The recent growth of the drug habit in the United States has been admitted by the authorities to have been appalling, and the consumption of opium, morphine, and cocaine over and above that required for medicinal purposes has been shown by official figures to be enormous. The evil, in fact, was sufficiently acute to justify a remedy even more drastic than that which has now been prescribed by law. The purpose of this legislation is to keep under strict control all transactions in certain narcotic substances, and in order to effect this object "every person who produces, imports, manufactures, compounds, deals in, dispenses, sells, distributes, or gives away opium or coca leaves or any compound, manufacture, salt, derivation or preparation thereof" is required to comply with specified conditions. The chief part in this campaign against self-drugging will be played by medical practitioners and pharmacists. All members of both callings must forthwith become registered by the Inland Revenue collectors of their districts and must pay a registration fee of $1 a year. Every medical practitioner in writing a prescription for any of the prescribed drugs is required to write thereon the name and address of the patient and his own address and registration number, and to sign the prescription with his full name. This should occasion little inconvenience, for it will be quite a simple matter to have the registration number printed on prescription forms, together with the name and address. The prescriptions cannot be dispensed more than once, so that the new law definitely disposes of the problem of the repetition of prescriptions for narcotic drugs. A medical practitioner who dispenses his own medicines or requires any of the drugs in question for his own use will be obliged to write his order on an official form supplied by the Inland Revenue and costing ½*d.* each. He must make a record, to be preserved for two years, of all such drugs dispensed by him, which record must include the quantity of the drugs dispensed, the date, and the name and address of the patient. There is, however, a provision excusing practitioners from keeping any record of narcotic drugs which they personally administer to their patients. Apparently the new law does not affect the practice of medical men to any greater extent than has just been explained and, judging from the opinions expressed in representative medical journals in America, there is no noteworthy tendency on the part of the profession to object to fulfil the conditions laid down. The new law prohibits a pharmacist from selling to the public any of the drugs affected except on the original prescription of a duly qualified practitioner who has been registered by the local Inland Revenue officer, and every prescription must be preserved for two years. Further, no pharmacist may be supplied by his wholesale house with any of the drugs unless they are ordered on an official form; the order must be written in duplicate, the duplicate to be retained for two years, and to be available for inspection by the Federal and municipal authorities. The provisions of the Act do not apply to preparations of opium and coca leaves "which do not contain more than two grains of opium or more than one-fourth of a grain of morphine, or more than one-eighth of a grain of heroin, or more than one grain of codeine, or any salt or derivative of any of them in one fluid ounce, or, if a solid or semi-solid preparation, in one avoirdupois ounce; or to liniments, ointments, or other preparations which are prepared for external use only, except liniments, ointments, and other preparations which contain cocaine or any of its salts or alpha or beta eucaine or any of their salts or any synthetic substitutes for them." Since most of the official and commonly prescribed preparations contain a larger proportion of the drugs named than is laid down in the exempting provision the exclusion of weak preparations is not a very serious matter. The American experiment will be watched with interest by other countries, and when the world is at peace again it may well be that other countries will follow the American example.

ELECTROCARDIOGRAPHIC STUDY OF THE ANAPHYLACTIC RABBIT.

THE use of the string galvanometer has shed much light on the physiological and pathological action of the heart not only in animals but in man. It has become an almost necessary part of the equipment of every large hospital. So far the cardiac disturbances in serum anaphylaxis have not received much attention. It is known from the researches of Gay and Southard in 1907 that the heart of the anaphylactic guinea-pig often shows hæmorrhages. Later, by inspection and the graphic method, J. Auer, J. Lewis, and others observed definite pathological alterations of the heart's activity during serum anaphylaxis, such as abrupt diminution in rate in the dying heart. The block was thought to be due to asphyxia. Heart block and other cardiac disturbances have been demonstrated in the dog by the electrocardiograph. It would therefore appear that heart disturbances in serum anaphylaxis of the intact animal are common in this state, and apparently form an integral part of anaphylaxis. John Auer and G. Canby Robinson[1] have studied by the electrocardiograph the main changes which the heart of the anaphylactic rabbit reveals to this instrument. The rabbits were sensitised by repeated subcutaneous injections with horse serum. About four weeks after the last injection the animals were given the final toxic dose of about 9 c.c. into a marginal ear vein. The electrocardiograms were taken at short intervals before, during, and after the injection; the Edelmann string galvanometer was used, the right fore and left hind leg being connected with the instrument. Care was taken to separate the cardiac disturbances resulting primarily from the anaphylactic reaction from those which occurred as phenomena of the

[1] Studies from the Rockefeller Institute for Medical Research, xix., 1914.

dying heart, cessation of respiration being taken as the index of death. Intravenous injection of horse serum into non-sensitised normal rabbits showed no such changes in the electrocardiograms as were seen in the sensitised animals. In the latter marked and various changes of the heart's activity were recorded in 22 out of 24 animals. Changes occurred in fatal as well as in non-fatal cases, after the vagi were cut, as well as when they were intact. As cardiac disturbances are thus a practically constant result of serum anaphylaxis in the rabbit, it is possible that anaphylaxis plays a rôle in the causation of certain cardiac derangements in man.

RINGWORM IN THE TROPICS.

AT one time it was believed that the ringworm met with in the tropics was the same as that which is encountered in temperate climes. This view, however, does not now meet with acceptation among experts. Lately some further evidence on the subject has been put forward in a recent number of the *Journal of Tropical Medicine and Hygiene* by Dr. Albert J. Chalmers, director of the Wellcome Research Laboratories, Khartoum, and Mr. A. Marshall, the senior bacteriologist. These experts summarise the history of ringworm in the tropics, and point out that at least seven different species of fungi have already been recognised as the causal agents of the disease. They have now found among schoolboys and youths in the Anglo-Egyptian Soudan a new, and as yet undescribed, variety of tinea which they were able to cultivate in various media. This fungus, it appears, belongs to the class of Fungaceæ of Linnæus, called ascomycetes by de Bary; it also belongs to the family Gymnosaceæ and to the genus Trichophyton. The authors propose to give it the name of Trichophyton curri. The alopecial patches caused by this fungus are small as a rule, and not very noticeable; the prognosis as regards baldness is apparently good, to judge at least by the cases already observed. A number of different remedies were tried in the treatment of this Soudanese form of ringworm, most of which, however, gave only temporary relief; the best results were obtained by the use of a special kind of tobacco-soap (nicotiana-seife) made in Bremen. With regard to prophylaxis it is thought that much may be done by regular and systematic medical inspection of all children in schools with a view to the discovery of parasitic diseases, and by prompt treatment as soon as evidence of ringworm is found. As the disease seems to spread but slowly in a school much may be done by medical inspection and early treatment to arrest the progress of the infection.

PUBLIC HEALTH IN BOMBAY.

FOR the first time in its history the city of Bombay—the third city in point of population in the British Empire—has had a death-rate lower than its birth-rate. For the week ending Nov. 21st, 1914, the death-rate was 20·49 per 1000, while the birth-rate was 23·25. The quinquennial averages for this week (1909–1913) were, for deaths 30·91 and for births 24·65 per 1000. On account of the war there had been a large exodus from the city; and if, as an allowance for this, the actual population be estimated at 900,000, the respective death-rate and birth-rate work out as 22·30 and 25·30; even so, the death-rate is lower and the birth-rate higher than the quinquennial average. There is no doubt as to the fact of the exodus on account of the war, but the birth-rate should have been affected as well as the death-rate by this occurrence; on the other hand, there was a considerable influx into Bombay, from all parts of India, of troops and followers, and of pilgrims. No case of infectious disease occurred among the troops during their stay in Bombay, and the sickness and mortality rates were very low, only seven deaths occurring among soldiers of all classes, British and Indian. All infectious diseases were at a minimum; during 14 days only one case of plague occurred, and this was imported. It may be said with reason that the sanitary condition of Bombay has reached a standard of excellence that reflects the greatest credit on those responsible for the health of the city, and gives them every encouragement to persevere in their efforts to maintain it at its high level.

A NEW TYPE OF FRACTURE OF THE ANKLE.

AN important paper on a new type of fracture of the ankle has been published in the *Journal of the American Medical Association* by Dr. F. J. Cotton. It was read at the last annual meeting of the Association. There is backwards dislocation of the ankle with splitting away of a wedge, large or small, from the posterior surface of the tibia. The wedge is displaced backwards and carries the posterior tibio-astragaloid ligaments upwards and backwards with the foot. Fracture of the malleoli is associated with the luxation, and hence the condition is often confounded with Pott's fracture. As a rule, the posterior tibial fragment is separate from the malleolar fragments, though sometimes the internal malleolus and posterior tibial edge are included in one piece that is split away in a spiral line. It has long been recognised that certain cases of Pott's fracture are complicated by backward luxation of the foot. Dr. Cotton claims that nearly all these cases are not examples of Pott's fracture but of the condition now described. His attention was first called to it by certain cases of old fracture of the ankle which came under his care for a reconstructive operation. There was extreme backward displacement of the foot, a condition which he had not previously met and could not find described. The lesion had been overlooked and left unreduced by skilled surgeons despite good radiograms. Not only is the lesion not a simple variant of a Pott's fracture, but the attempt to treat it as such is disastrous in a large percentage of cases. A Pott's fracture is bad enough with two sides of the articular mortise gone, but when the astragalus is driven behind the mortise and deprived not only of lateral support but of any vertical bearing the condition is apt to be hopeless unless properly treated. A twist is usually given as the cause of the injury. One patient slipped on the edge of a mat while wrestling. Another twisted her foot outwards as she stooped from her chair to pick up a rolling spool, a rug slipping under her foot. Apparently an outward and backward twist of the foot is usual, and the fracture takes place while weight is borne on the ball of the foot. Reduction is simple if the lesion is understood. All that is necessary is forward traction with the muscles relaxed in moderate plantar flexion. Having thus brought about the reduction in maximum dorsal flexion it must be held in plaster. If the lesion is not understood the results are bad unless spontaneous reduction occurs. If reduction, spontaneous or operative, is accomplished

the results are excellent and not inferior to those of Pott's fracture. The after-treatment is the same as in this fracture, except that early movement is necessary, but no weight should be borne on the foot for at least seven or eight weeks. The important thing is to know of and look out for this not uncommon and neglected lesion.

NON-PANEL PRACTITIONERS AND INSURANCE ACT CERTIFICATES.

THE questions raised in letters to THE LANCET of Jan. 23rd with regard to certificates of illness given by medical men not upon the panel, and not attending patients who have made their own arrangements for medical benefit, are dealt with in Circular A.S. 161, issued by the Insurance Commissioners, the gist of which is that in the cases referred to Form Med. 40 is not applicable, and it should not be used or asked for. The Commissioners, however, "desire to point out in the clearest terms that insured persons do not disqualify themselves from receiving sickness benefit by obtaining their certificates from doctors attending them in a private capacity." The following passage may be quoted:—

> Though a society must distinguish these certificates, it must give them due consideration. A society is not entitled to refuse to receive and consider, in connexion with a claim to benefit, certificates not given under the Medical Certification Rules. On the contrary, a society is bound to take into due consideration any medical certificate put forward in support of a claim. This obviously does not mean that benefit must be paid on every certificate. The society has a responsibility which it is bound to discharge, and every certificate must be considered on its merits. Even where a certificate is on the official form and signed by a panel doctor in the ordinary way, the society should, of course, not pay without consideration. It should consider the certificate and decide whether it affords sufficient evidence for payment or whether further information is desirable, arranging special sick visiting or referring the case to a medical referee as may be required. And where the certificate is not on Form Med. 40 (and is therefore the certificate of a doctor who has attended the member in a private capacity), inquiries must often be needed which the understandings embodied in the Medical Certification Rules render unnecessary in cases certified under those rules.

The attitude of the Commissioners would appear to be one of toleration rather than encouragement of insured persons who show their independence by employing their own medical attendants, and who thus increase the funds available for insurance without deriving any "medical benefit" from them. It is to be regretted that means should not have been devised whereby all medical men certifying should, so to speak, meet on equal terms, writing their certificates upon forms that would make no distinction between the panel and the non-panel practitioner, and subject alike to penalties in respect of any certificate improperly given.

A CASE OF TRICHOCEPHALUS DISPAR.

THE presence of this parasite in the body is difficult to detect; the worm itself, too, is very hard to eradicate. Most characteristic of infection with this small whip-like worm, which buries its more slender extremity deeply into the intestinal mucosa, is the presence in the fæces of the ova which it passes. These are oval with a dark crenated "shell," and have a rounded knob at each end. They are passed in large numbers; they must, however, be carefully sought for, and it is wise to wash the fæces through muslin. A case of this condition is described by Dr. Henry C. Drury in the *Dublin Journal of Medical Sciences* for March, 1915. The boy was aged 12, and his appearance suggested Hodgkin's disease because of the great enlargement of the glands in the neck and anæmia. He looked wretchedly ill. He had, however, a voracious appetite, though very constipated. Often there was abdominal pain. The blood examination showed a positive Wassermann reaction; there were also, and this was significant, 10 per cent. of eosinophiles in the blood count. This suggested "intestinal worms," and after a dose of santonin an ascaris lumbricoides was voided. Careful microscopical examination of the fæces showed the ova of trichocephalus dispar as well. After many drugs had been tried for this parasite and proved of no avail the operation of appendicostomy was performed. Through this route the colon was irrigated with thymol emulsion and also infusion of quassia, but no result was gained until, finally, a soap-and-water enema, two pints in quantity, resulted in the passage of a copious stool in which were found about a dozen of the parasites. Following this improvement and recovery were uninterrupted. After irrigation of the colon with infusion of quassia at intervals for a few days the wound was closed. Treatment with salvarsan cured the glandular condition. Reference to the literature shows examples of two other cases in which the parasites were found at operation to be in the appendix itself. Though in the present case this was not so, the symptoms at times very much simulated appendicitis.

THE RESULTS OF ANTIMALARIAL PROPHYLAXIS IN ITALY.

FOR the last two years, in face of a slight increase in the mortality from malaria, a certain amount of pessimism has been rife in Italy asserting that the hygienic measures hitherto adopted against that disease have reached their limit, and uttering a warning note that radical results are not possible without a profound transformation of the mosquito-ridden soil. Some observers think that the malarial parasite exists not only in malaria-infected man but also in some other animal, so that the infection of the transmitting mosquito arises not only from the gametiferous man but also from these other animals which harbour the virus. In a recent issue of *Il Morgagni* Dr. E. Bertarelli, professor of hygiene in the University of Parma, draws attention to the fact that the mortality in 1912 again reached a lower figure, the lowest hitherto observed since the mortality returns have been published. In ten years these figures had declined from more than 15,000 deaths to 3000 with absolute regularity, which is in itself proof of the efficacy of the measures adopted. The figures also show that the diminution of mortality again recorded for 1912–13 coincides with an increase in the consumption of quinine provided by the State, while there was also during the same period an increase in the amount of quinine sold privately in the country. A connexion between these facts may logically be assumed, and it is difficult to explain in any other way the reappearance of a decreasing mortality. Professor Bertarelli argues that if gametiferous human beings are the only source of infection for the mosquitoes it would follow that if these sources

are eradicated malaria would cease by automatic necessity. With more assiduous administration of quinine fewer gametiferous beings must be formed and the old stock must be fatally exhausted in a certain number of years by the necessary reduction which death causes. These considerations, taken in conjunction with the reappearance of the diminishing mortality, suggest that apart from human beings no other sources of malaria exist. The author does not deny that the use of mechanical means of defence and the destruction of the mosquitoes have been attended with conspicuous success, but he points out the difficulties inseparable from completely satisfactory achievement—for example, the destruction of hibernating mosquitoes, chiefly females, which are found in a condition of immobility in crevices and on walls. He is, however, strongly of opinion that the free consumption of quinine in malarious districts is the weapon which has given the most certain and rapid results.

THE library and offices of the Royal Society of Medicine will be closed for the Easter holidays from Thursday next, April 1st, to Tuesday, April 6th, both days inclusive.

ASYLUM REPORTS.

Suffolk District Asylum (*Annual Report for the Year 1913*).—The total number of cases under treatment during the year was 1107, the average daily number resident being 917. The total number of admissions was 209 and the discharges amounted to 101. The recovery rate calculated on the net admissions was 15·8 per cent. There were 114 deaths, representing 12·4 per cent. on the average number resident. Of the total deaths 18·4 per cent. were due to senile decay, 19 per cent. to some form of tuberculous disease, and 10·5 per cent. to general paralysis of the insane. Dr. J. R. Whitwell, the medical superintendent, in making some general remarks, refers to the fact that it has been decided by the present lunacy law that if a man is well-to-do he can go to an institution for the treatment of mental disease and become a voluntary boarder, but that if he is a poor man he must go on from bad to worse, and even to attempted suicide (or whatever ultimate tendency his case has), before he can be brought under proper treatment. It is quite clear to all thinking persons dealing with mental disease that some greater latitude must sooner or later be given by the law, especially in the case of public institutions, if such institutions are to give their best service to, and perform their true function in, the community, and some greater degree of confidence must be placed in and some discretionary power given to the medical staff of what really is and should be called the "mental hospital" of the county than is either given or implied by the present Lunacy Act.

West Riding Pauper Lunatic Asylum, Wakefield (*Annual Report for the Year 1913*).—The total number of patients under treatment was 2500, the average daily number resident being 2068. The admissions amounted to 462 and the discharges to 155, of which 119 were recoveries, making a percentage of 25·76 on the total admissions. There were 241 deaths, making a rate of 11·65 per cent., estimated on the average number resident. Post-mortem examinations were performed in 85 per cent. of the deaths. During the year out-of-door treatment of the patients has been continued with satisfactory results. During the greater part of the year the whole of the recently admitted sick and infirm patients are kept in bed out of doors in the open air from morning until night, and meals are provided out of doors for the whole of the patients in the institution. The general health of the institution has been satisfactory, but 100 cases of dysentery have occurred during the year, of which 20 died. This epidemic of dysentery made the routine work of the pathological department very heavy. Numerous Wassermann reactions have been performed and all the newly bought cattle tested with tuberculin. Dr. J. S. Bolton, the medical superintendent, draws attention to the importance of the educational work of the asylum, where the whole of the training for the diploma in psychological medicine of the University of Leeds is carried out. Dr. Bolton has been engaged throughout the year in completing a work on cerebral function, and his assistants, Dr. H. Devine, Dr. Alice Babington, and Dr. W. Robinson, and Mr. Harold S. Gettings, the pathologist, were all engaged in scientific research.—*Stanley Hall.*—Twelve new cases have been admitted during the year, and of these 6 attend school. During several months of the year the whole of the boys have lived outside, and the lessons have been conducted in the open air. The out-patient department continues in a flourishing condition.

The Retreat, York (*Annual Report for the Year 1913*).—The total number of cases under treatment during the year was 259, of which 26 were voluntary boarders. The average daily number resident was 181·37 certified patients and 5·12 voluntary boarders. There were admitted 52 certified cases, and of these 48 were direct admissions. In no less than 14 of the new cases no cause whatever for the insanity could be assigned, in spite of the care taken in studying their history. The discharges numbered 37, of which 15 were recoveries. There were 8 deaths. Dr. Bedford Pierce, the medical superintendent, refers to the treatment of incipient insanity, and points out that as things are at present little or nothing can be done for persons threatened with a mental breakdown; the general hospitals have no beds for such and the public asylums cannot admit them unless certified as insane. The county and borough asylums in England and the district and parochial asylums of Scotland are not permitted to receive voluntary boarders. Expert treatment is therefore unattainable by the poor until the illness has become so pronounced that the patient can be certified as insane. Those persons who are on the verge of a breakdown, and who can afford to pay, can apply for admission as voluntary boarders to hospitals for the insane and licensed houses; but it commonly happens that the patients most needing treatment are not able to make up their minds to apply or decline to entertain the idea. Even when persuaded to come under care voluntarily many do not stay long enough to derive any benefit. It therefore seems desirable that besides ordinary certified patients and voluntary boarders there should be a legally recognised class which for the present purpose we may call "notified" patients. Persons so received would be detained for a strictly limited period, say three months, with a power to extend to six months in all, provided the facts of the case were fully notified to the Board of Control, and such medical statements supplied as the Board might require. It is assumed that notified patients would be visited periodically by members of the Board of Control, that no restrictions would be placed upon their correspondence, and that in other ways ample safeguards would be provided against abuse. But in addition to this it is much to be desired that early and undeveloped cases should be received temporarily into any institution for the insane approved by the Board of Control without the necessity for formal certification.

Waterford District Lunatic Asylum (*Annual Report for the Year 1913*).—The number resident in the asylum on Dec. 31st, 1913, was 642, which was 17 more than at the beginning of the year. The average daily number resident in the asylum was 632 and the total number of admissions was 65, which is the smallest number for the past 30 years and well below the average for the past 10 years. The principal assigned causes of insanity in those admitted were as follows: Hereditary predisposition, 22 cases; mental stress or worry, 19; alcoholic excess, 11; mental deficiency, 6. The number discharged was 26, with a recovery rate calculated on the number admitted of 32·3 per cent., which is the lowest rate since 1908. There were 22 deaths, making a proportion of 3·5 per cent. on the average daily number resident. This is 3·5 below the average death-rate of the other Irish asylums. Tuberculous disease accounted for 18·1 per cent. of the total number. If the foregoing figures are closely examined it will be seen that although there has been an increase of 17 patients during the past year this is due almost entirely to the accumulation of patients. There has been a marked diminution in the number admitted, but at the same time the number discharged and died have declined.

The Coppice Mental Hospital for the County and City of Nottingham (*Annual Report for the Year 1913*).—The total number of cases under treatment during the year was 114, the average daily number resident being 89. The number of cases admitted was 24, and in 29 per cent. of these a definite neurotic history was ascertained. There were 18 discharges, with 10 recoveries, giving the good percentage of 43·47 on the admissions. There were only 3 deaths, making the low proportion of 3·36 per cent. on the average number resident. One patient was admitted as a voluntary boarder. Dr. D. Hunter, the medical superintendent, remarks that it is to be regretted that more patients do not take advantage of this method of obtaining treatment when a mental breakdown is felt to be impending. At this early stage a course of treatment would in many cases relieve or prevent the attack of insanity, and the patient would be spared the stigma of certificates. A much-needed addition to the curative resources of the hospital was made in the shape of a shelter for the out-of-door treatment of acute cases.

Glamorgan County Lunatic Asylum, Bridgend (*Annual Report for the Year 1913*).—The total number of cases under treatment during the year was 2106, the average daily number resident being 1784·9. There has been overcrowding to the extent of 123 males and 13 females as regards dormitory space, and 194 males and 103 females as regards day-room space. The total number of admissions was 353, of which 339 were direct. The most obtrusive feature in the etiological tables is the fact that cases in which alcohol is ascribed as principal or contributory cause are 32 less than last year, the percentage being 12·4, as compared with 21·0. The discharges numbered 132, of which 91 were recoveries. The recovery rate on the total admissions is 4 per cent. lower than last year. The exceptionally low death-rate of 8·1 per cent. on the average daily number on the register has not been recorded since the year 1896. The disease responsible for the largest number of deaths is general paralysis of the insane, the proportion being 23·4 per cent. Deaths due to tuberculous diseases are less numerous than last year, and are 14·5 per cent.

Down District Lunatic Asylum (*Annual Report for the Year 1913*).—The total number of cases under treatment during the year was 900, the average daily number resident being 770. The total number of admissions was 139. With regard to the assigned causes and associated factors, it is interesting to note that passing events influence very largely the manner in which current insanity manifests itself. During the past year contemporary insanity has been tinged by occurrences more or less ephemeral which have taken place. In cases of delusions, the "voices" are now definite commands of opposing factions of political and sectarian strife, the "vague fears" are the acute terrors of "civil war," the "unknown enemies" are "Orangemen" or Hibernians, as the case may be. In some cases undoubtedly this strain was the exciting cause of the breakdown; in others it unquestionably shaped the form of the attack which would have occurred in any event. At all periods of exceptional popular emotional waves the lunatics of the period reflect in their delusions the prevailing ideas. The discharges numbered 73, with a recovery rate on the admissions of 44·6 per cent. The deaths amounted to 52, making a rate of 6·8 per cent. on the average number resident.

City of Cardiff Mental Hospital (*Annual Report for the Year 1913*).—The total number of cases under treatment during the year was 916, the average daily number resident being 710. The direct admissions amounted to 170, and there were 76 transfers from other asylums. A history of heredity of some kind was elicited in 47 per cent. of the direct admissions. The discharges numbered 88, with a recovery rate calculated on the direct admissions of 35·88 per cent. There were 97 deaths, and necropsies were held in 91 cases. Tuberculosis was directly responsible for deaths in 17·52 per cent., and tubercle was found in 4 others. General paralysis was the cause of death in 18·55 per cent. of the cases. Dr. E. Goodall and Dr. H. A. Schölberg have carried out research work in connexion with the Wassermann reaction, the results of which were communicated at the last International Congress of Medicine in London.[1] They have also investigated the question of the production of specific antiserum in rabbits by injecting them with serum from patients suffering from dementia paralytica and dementia præcox. A very large number of rabbits were injected, but only in four or five was a precipitin produced which was capable of causing abundant precipitate in the corresponding human serum in a dilution of 1 : 1000. Their experiments showed that the antiserum produced by injection of a rabbit with serum from a case of a given kind of insanity is not specific as far as precipitin formation is concerned. The method cannot therefore be used for diagnosis. Dr. Goodall and Dr. Schölberg are also engaged in examining the brain cortex of general paralytics and the blood of these and of cases of the disease known as dementia præcox for the possible presence of organisms growing anaerobically. Dr. Goodall has been also testing the treatment of cases of acute and recent insanity with leucocytic extract. He has found that large doses of thyroid (40–60 grains a day) have given satisfactory results in certain cases of an "anergic" type, and have sometimes reduced the number of fits in cases of epilepsy. He considers that the whole subject of metabolism in the psychoses is in urgent need of examination. The dietetic treatment of epilepsy has also been investigated. Dr. Stanford, the research chemist, has been studying the cerebro-spinal fluid of the insane from a quantitative point of view. Mr. Barton White has continued his investigations of the bacteriology of intestinal contents, and also a bacteriological examination of the urine in general paralysis. Dr. D. J. Jackson has made a large number of qualitative leucocytal counts in certain typical cases of acute insanity.

Staffordshire County Mental Hospitals at Stafford, Burntwood, and Cheddleton (*Annual Report for the Year 1913*).—The total number of cases under treatment during the year was 1117, the average daily number resident being 888. The total number of admissions was 248, and the principal causes assigned for the mental trouble were as follows: Heredity, 53; alcohol, 25; epilepsy, 21; mental stress, 18; senility, 14; puerperal state, 5; climacteric, 4; and congenital mental deficiency, 3. There were 113 discharges, with a recovery rate of 23·7 on the admissions. There were 106 deaths, giving a proportion of 11·93 per cent. on the average daily number resident. Phthisis was responsible for 28 of the deaths. Necropsies were only made in 56 instances. The question of providing verandahs for the better treatment of tuberculosis cases has been under the consideration of the committee for some time.

[1] THE LANCET, Dec. 26th, 1914, p. 1451, also Dec. 5th (p. 1287), 12th p. 1343), and 19th (p. 1397).

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE undermentioned have been granted temporary commissions as Surgeon in His Majesty's Fleet:—Charles Williams Lewis and John Francis Pace.

The following appointments have been notified:—Surgeons: H. W. Nicholls to the *Faulknor*; and F. H. Stephens to the *Pembroke*, additional. Temporary Surgeons: J. F. McQueen to the *Victory*, additional, for Royal Naval Division Depôt at Crystal Palace; D. Sutherland to the *Vernon*; M. B. Hay, D. R. Bedell-Sivright, N. P. Price, J. Bostock, F. H. Rees, G. L. Ritchie, E. M. Lauderdale, and L. S. Fry, all to the *Victory*, additional, for Royal Naval Division.

ROYAL NAVAL VOLUNTEER RESERVE.

Surgeon Robert Joseph Willan has been specially promoted to the rank of Staff-Surgeon for distinguished service (dated March 5th).

The undermentioned Surgeons have been promoted to the rank of Staff-Surgeon: Reginald John Edward Hanson (dated Dec. 23rd, 1911). Edward John Steegman (dated Feb. 13th, 1912). Harry Reah (dated May 16th, 1913). William Edmund Harker (dated August 3rd, 1913).

Staff Surgeon Francis John Hannan has been promoted to the rank of Honorary Staff-Surgeon (dated March 17th).

ARMY MEDICAL SERVICE.

Lieutenant-Colonel Albert L. F. Bate, from Royal Army Medical Corps, to be Colonel (dated March 1st).

ROYAL ARMY MEDICAL CORPS.

Temporary Captain Percy Sargent is granted temporarily the honorary rank of Lieutenant-Colonel (dated Dec. 13th, 1914).

Temporary Captain Gordon M. Holmes is granted temporarily the honorary rank of Major (dated Dec. 13th, 1914).

The undermentioned Temporary Lieutenants to be Temporary Captains:—Isaac Jones (dated March 20th); William Parry Morgan and Charles W. G. Bryan (dated March 21st); and Fergus Armstrong (dated March 23rd).

INDIAN MEDICAL SERVICE.

The King has approved the promotion of the following officers:—Captains to be Majors: Charles Gibbons Seymour, Thomas Corrie Rutherford, Ernest Charles Taylor, and Alfred Whitmore (dated Jan. 31st).

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Lieutenant William K. Campbell is confirmed in his rank.

TERRITORIAL FORCE.

Army Medical Services.

Lieutenant-Colonel Charles Averill, from Sanitary Service, to be Deputy Assistant Director of Medical Services, Welsh Division (dated Feb. 17th). Captain Charles S. Wink, from Attached to Units other than Medical Units, to be Deputy Assistant Director of Medical Services, East Anglian (Reserve) Division (dated Feb. 14th).

Royal Army Medical Corps.

South-Eastern Mounted Brigade Field Ambulance: Major (Honorary Lieutenant in the Army) Lewis Harcourt Coles, Reserve of Officers, Retired List, Territorial Force, to be Transport Officer, with the honorary rank of Captain (dated March 18th).

Yorkshire Mounted Brigade Field Ambulance: Surgeon-Captain Robert A. Draper, from East Riding of Yorkshire Yeomanry, to be Major (temporary) (dated March 14th).

3rd East Lancashire Field Ambulance: Lieutenant Charles Bertram Marshall to be Captain (temporary) (dated Feb. 27th).

3rd North Midland Field Ambulance: Lieutenant-Colonel Lewis Walter Pocket, Retired List, Territorial Force, to be Lieutenant-Colonel (temporary) (dated Feb. 22nd).

1st Northern General Hospital: Major Frederick C. Pybus to be seconded (dated March 12th).

Welsh Border Mounted Brigade Field Ambulance: Frank Leslie Newton to be Lieutenant.

1st Eastern General Hospital: Paul Norman Blake Odgers to be Captain, whose services will be available on mobilisation.

Northumbrian Casualty Clearing Station: Charles Frederick Morris Saint to be Lieutenant.

Attached to Units other than Medical Units.—To be Majors: Captain (Honorary Lieutenant in Army) Michael J. Mahoney and Captain Peter M. Dewar. Captain John Orton, from the Territorial Force Reserve, to be Captain. Donald Peter Maclaren Farquharson (late Lieutenant 5th Volunteer Battalion, Argyll and Sutherland Highlanders), to be Captain (temporary). To be Lieutenants: Thomas Willoughby Cole, Ismay Donald Stubbs, and Lieutenant Duncan F. Macrae, from London Mounted Brigade Field Ambulance.

DEATHS IN THE SERVICES.

Deputy Inspector-General Charles Alexander Lees, R.N., recently, in his 81st year. He served in the Baltic operations in 1855 (medal) and in the China war, 1857–59, being in charge of the garrison of Macao Fort, Canton River (China medal).

PROMOTION IN THE ROYAL ARMY MEDICAL CORPS.

The Under Secretary of State for War has sent the following reply in answer to a question by Sir Clement Kinloch-Cooke, M.P.: "In reply to your letter, in which you raised the question of the promotion of junior officers in the Royal Army Medical Corps, I am glad to be able to inform you that it has now been arranged that all the lieutenants in the Royal Army Medical Corps should be promoted captains."

JOURNAL OF THE ROYAL ARMY MEDICAL CORPS.

The December issue of this journal, just published, closes the twenty-third volume. The first article is a continuation of the joint communication on the Trypanosome Causing Disease in Man in Nyasaland, by Sir David Bruce, Major A. E. Hamerton, Captain D. P. Watson, and Lady Bruce, quoted from the Proceedings of the Royal Society. In Notes on the Bacteriology of Wounds, by Lieutenant T. H. Just, Demonstrator of Pathology at St. Bartholomew's Hospital, giving a short series of cases examined in No. 12 General Hospital at Rouen, the conclusion is drawn that the infection of wounds is in the main one of low virulence, the damage of the tissues being chiefly effected by the concussion of the shell or bullet, as the case may be, and not by the infecting micro-organism. Major C. F. Wanhill has a useful article on Incineration and Incinerators as Applied to Cantonments in India; Captain G. K. Aubrey describes a short form of stretcher for use in trenches[1]; and there is an interesting communication from Dr. Moraes Manchego, Médecin de l'Armée portugaise, on Statistiques Sanitaires; Leur Importance pour l'Etude des Conditions Physiques et Morales des Troupes. Colonel R. H. Firth takes for the subject of his note-book talks Phantom Matter, and explains the present position or meaning of the recently acquired facts concerning the radio-elements. He has endeavoured to use simple language, but, as he points out, it may be stiff reading for some.

[1] THE LANCET, Dec. 26th 1914, p. 1488.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN the 96 English and Welsh towns with populations exceeding 50,000 persons at the last census, 8582 births and 6714 deaths were registered during the week ended Saturday, March 20th. The annual rate of mortality in these towns, which had declined from 20·7 to 19·7 per 1000 in the four preceding weeks, further fell in the week under notice to 19·3 per 1000 of their aggregate population, estimated at 18,134,239 persons at the middle of 1914. During the first eleven weeks of the current quarter the mean annual death-rate in these towns averaged 19·5, against a corresponding rate of 20·3 per 1000 in London. The annual death-rate last week ranged from 8·2 in Gloucester, 9·5 in Lincoln, 9·7 in Barnsley, 10·0 in Dudley, and 10·3 in Ilford and in Gillingham, to 25·3 in South Shields, 26·4 in Preston, 26·8 in Wigan, 27·6 in Merthyr Tydfil, and 28·0 in Darlington.

The 6714 deaths from all causes were 149 fewer than the number in the previous week, and included 739 which were referred to the principal epidemic diseases, against numbers increasing from 511 to 657 in the five preceding weeks. Of these 739 deaths, 421 resulted from measles, 151 from whooping-cough, 63 from infantile diarrhœal diseases, 61 from diphtheria, 29 from scarlet fever, and 14 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 2·1, or 0·2 per 1000 higher than that recorded in the previous week. The deaths attributed to measles, which had increased from 207 to 373 in the five preceding weeks, further rose to 421 last week, and caused the highest annual death-rates of 3·5 in Stockton-on-Tees, 3·8 in Wolverhampton, 4·1 in St. Helens, 5·1 in Enfield, 5·4 in Cambridge, 5·7 in West Hartlepool, 6·1 in Smethwick, 6·8 in West Bromwich, and 8·8 in Darlington. The deaths referred to whooping-cough, which had been 111, 110, and 120 in the three preceding weeks, further rose to 151 last week, and included 41 in London, 9 in Liverpool, 8 in Bristol, 5 in Wigan and in Leeds, and 4 each in Portsmouth, Southampton, Hull, and Merthyr Tydfil. The fatal cases of diarrhœa and enteritis (among infants under 2 years), which had been 75, 71, and 77 in the three preceding weeks, fell to 63 last week, of which 15 were registered in London, 5 in Leeds, and 3 each in Birmingham and Sheffield. The deaths from diphtheria, which had declined from 80 to 51 in the four preceding weeks, rose to 61 last week, and included 17 in London, 6 in Birmingham, and 3 each in West Ham, Stoke-on-Trent, Liverpool, and Sheffield. The deaths referred to scarlet fever, which had been 38, 32, and 21 in the three preceding weeks, rose to 29 last week; 6 deaths belonged to London, 3 each to Liverpool and Merthyr Tydfil, and 2 to Darlington. The fatal cases of enteric fever, which had been 13, 10, and 15 in the three preceding weeks, were 14 last week, and included 2 each in London, Liverpool, and Manchester.

The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had steadily declined from 5036 to 2850 in the 16 preceding weeks, had further fallen to 2730 on Saturday last; 289 new cases were admitted during the week, against 302, 298, and 275 in the three preceding weeks. These hospitals also contained on Saturday last 1505 cases of diphtheria, 283 of measles, 57 of enteric fever, 19 of whooping-cough, and 3 of small-pox. The 1826 deaths from all causes in London were 32 in excess of the number in the previous week, and corresponded to an annual death-rate of 21·1 per 1000. The deaths referred to diseases of the respiratory system, which had been 476, 468, and 442 in the three preceding weeks, rose to 478 last week, and were 228 above the number recorded in the corresponding week of last year. The deaths from influenza numbered 67, against 83, 48, and 54 in the three preceding weeks.

Of the 6714 deaths from all causes in the 96 towns 199 resulted from different forms of violence and 489 were the subject of coroners' inquests, while 1795 occurred in public institutions. The causes of 48, or 0·7 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in Leeds, Bristol, West Ham, Bradford, Newcastle-on-Tyne, and in 67 other smaller towns. Of the 48 uncertified causes of death, 10 were registered in Birmingham, 4 each in Stoke-on-Trent, Liverpool, and St. Helens, 3 in Bootle, and 2 each in Coventry, Warrington, Hull, and South Shields.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns with an aggregate population estimated at 2,345,500 persons at the middle of this year, 1149 births and 936 deaths were registered during the week ended Saturday, March 20th. The annual rate of mortality in

these towns, which had been 21·2, 23·2, and 20·9 per 1000 in the three preceding weeks, further fell to 20·8 per 1000 in the week under notice. During the first eleven weeks of the current quarter the mean annual death-rate in these towns averaged 22·5, against 19·5 per 1000 in the large English towns. Among the several towns the death-rate last week ranged from 9·5 in Coatbridge, 13·7 in Falkirk, and 14·9 in Paisley, to 22·6 in Kilmarnock, 23·0 in Hamilton, and 30·0 in Dundee.

The 936 deaths from all causes were 4 fewer than the number in the previous week, and included 139 which were referred to the principal epidemic diseases, against 145 and 131 in the two preceding weeks. Of these 139 deaths, 88 resulted from whooping-cough, 26 from measles, 11 from scarlet fever, 7 from diphtheria, 6 from infantile diarrhœal diseases, and 1 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 3·1, against 2·1 per 1000 in the large English towns. The deaths attributed to whooping-cough, which had been 89, 91, and 87 in the three preceding weeks, were 88 last week, and included 44 in Glasgow, 26 in Dundee, 7 in Edinburgh, and 3 in Greenock. The deaths referred to measles, which had been 8, 21, and 15 in the three preceding weeks, rose to 26 last week, of which 15 were recorded in Glasgow and 9 in Dundee. The fatal cases of scarlet fever, which had been 11, 9, and 13 in the three preceding weeks, fell to 11 last week, and comprised 5 in Glasgow, 3 in Aberdeen, 2 in Edinburgh, and 1 in Kirkcaldy. The deaths attributed to diphtheria, which had been 11, 15, and 10 in the three preceding weeks, further fell to 7 last week, and included 4 in Glasgow and 2 in Aberdeen. The 6 deaths of infants referred to diarrhœa and enteritis were 1 below the average in the three preceding weeks, but showed no excess in any individual town. The fatal case of enteric fever occurred in Glasgow.

The deaths referred to diseases of the respiratory system, which had been 235, 264, and 215 in the three preceding weeks, further fell to 188 in the week under notice, but were 71 above the number recorded in the corresponding week of last year. The deaths attributed to violence numbered 36, against 34 and 23 in the two preceding weeks.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland with an aggregate population estimated at 1,212,380 persons at the middle of this year, 622 births and 558 deaths were registered during the week ended Saturday, March 20th. The annual rate of mortality in these towns, which had been 27·6, 27·4, and 25·9 per 1000 in the three preceding weeks, further fell to 24·0 per 1000 in the week under notice. During the first 11 weeks of the current quarter the mean annual death-rate in these towns averaged 25·8 against corresponding rates of 19·5 and 22·5 per 1000 in the English and Scotch towns respectively. The annual death-rate last week was equal to 23·8 in Dublin (against 21·1 in London and in Glasgow), 25·0 in Belfast, 25·8 in Cork, 21·5 in Londonderry, 31·1 in Limerick, and 32·3 in Waterford, while in the 21 smaller towns the mean rate was 20·0 per 1000.

The 558 deaths from all causes were 44 fewer than the number in the previous week, and included 36 which were referred to the principal epidemic diseases, against 36 and 37 in the two preceding weeks. Of these 36 deaths, 14 resulted from whooping-cough, 8 each from measles and scarlet fever, 4 from infantile diarrhœal diseases, and 2 from diphtheria, but not one from enteric fever or from small-pox. The mean annual death-rate from these diseases was equal to 1·5, against corresponding rates of 2·1 and 3·1 per 1000 in the English and Scotch towns respectively. The deaths attributed to whooping-cough, which had been 18, 10, and 12 in the three preceding weeks, rose to 14 last week, and comprised 13 in Dublin and 1 in Belfast. The deaths from measles, which had been 8 in each of the three preceding weeks, were again 8 last week, of which 7 occurred in Belfast and 1 in Dublin. The 8 fatal cases of scarlet fever were double the average in the earlier weeks of the quarter, and included 6 in Waterford. The deaths of infants (under 2 years) attributed to diarrhœa and enteritis, which had been 5, 11, and 14 in the three preceding weeks, fell to 4 last week, and comprised 2 in Dublin and 2 in Belfast. The 2 fatal cases of diphtheria were recorded in Dublin and Belfast respectively. In addition to the above deaths a fatal case of typhus was registered in Kilkenny.

The deaths referred to diseases of the respiratory system, which had been 187, 188, and 167 in the three preceding weeks, further fell to 155 in the week under notice. Of the 558 deaths from all causes, 160, or 29 per cent., occurred in public institutions, and 18 resulted from different forms of violence. The causes of 24, or 4·3 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the English towns the proportion of uncertified causes did not exceed 0·7 per cent.

VITAL STATISTICS OF LONDON DURING 1914.

IN the accompanying table statistics of sickness and mortality in the City of London and in each of the metropolitan boroughs are summarised for the year 1914. With regard to the notified cases of infectious diseases, it appears that the number of persons reported to be suffering from one or other of the ten diseases specified in the table was equal to a rate of 9·0 per 1000 of the population, estimated at 4,516,612 persons in the middle of the year; in the three preceding years the rates had been 4·5, 5·1, and 6·7 per 1000 respectively. Among the various boroughs the rates last year ranged from 5·9 in Holborn, 6·4 in Chelsea, 6·8 in Hampstead, and 6·9 in St. Marylebone and in Wandsworth, to 9·8 in Fulham, 10·4 in Hammersmith, 10·8 in Bethnal Green, 11·6 in Southwark, 12·5 in Deptford, and 12·7 in Stepney. The prevalence of scarlet fever showed a further marked increase last year, 25,015 cases being notified during the year, against 10,489, 11,312, and 17,552 in the three preceding years. Among the metropolitan boroughs the greatest proportional prevalence of this disease was recorded in Hammersmith, Fulham, Stepney, Southwark, and Deptford. The Metropolitan Asylums Hospitals contained 4431 scarlet fever patients at the end of last year, against 1878, 2088, and 3810 at the end of the three preceding years; 23,154 new cases were admitted during the year, against 9631, 10,488, and 16,255 in the three preceding years. Diphtheria also was more prevalent than it had been in other recent years; 9118 cases were notified, against 7101 and 7654 in 1912 and 1913 respectively. This disease was proportionately most prevalent last year in Hampstead, Bethnal Green, Stepney, Greenwich, and Woolwich. The number of diphtheria patients admitted into the Metropolitan Asylums Hospitals during the year was 8444, against 6184 and 6814 in the two preceding years; the number of patients remaining under treatment at the end of the year was 1663, against 959 and 1099 at the end of the two preceding years. The prevalence of enteric fever showed a slight increase over that in preceding years, 779 cases being notified against 704 and 758 in the two preceding years. Among the several boroughs this disease was proportionately most prevalent in Chelsea, the City of Westminster, St. Marylebone, Holborn, and Lewisham. The number of enteric fever patients admitted into the Metropolitan Asylums Hospitals during the year was 470, against 381 and 415 in the two preceding years; 68 cases remained under treatment at the end of the year, against 37 and 51 at the end of the two preceding years. The greatest proportional prevalence of erysipelas occurred in Finsbury, Shoreditch, Bethnal Green, Stepney, Southwark, and Deptford. The 393 cases of puerperal fever notified during the year included 33 in Fulham and in Stepney, 31 in Wandsworth, 29 in Southwark, 25 in Islington, 24 in Camberwell, and 23 in Poplar and in Lambeth. Of the 73 cases of cerebro-spinal meningitis 9 belonged to Poplar, 7 to Islington, 6 to Southwark, and 5 each to Bermondsey and Lambeth. The 93 cases of poliomyelitis included 27 in Stepney, 10 in Lambeth, 8 in Islington, 8 in Poplar, 5 in Hackney, and 5 in Camberwell.

The mortality figures in the table relate to the deaths of persons actually belonging to the several boroughs, and are obtained by distributing the deaths in institutions among the boroughs in which the deceased persons had previously resided; the death-rates from all causes are further corrected for variations in the sex and age constitution of the populations of the several boroughs. During last year the deaths of 64,994 persons belonging to London were registered, equal to a corrected death-rate of 14·4 per 1000; in the three preceding years the rates were 15·8, 14·3, and 14·2 per 1000 respectively. Among the several boroughs the lowest death-rates last year were 10·7 in Lewisham, 11·0 in Hampstead and in Wandsworth, 12·5 in Stoke Newington, and 12·9 in Paddington and in Chelsea; the highest rates were 17·3 in Stepney, 17·4 in Bermondsey, 17·9 in Southwark, 19·4 in Finsbury, and 19·6 in Shoreditch. The deaths from all causes included 6503 from the principal infectious diseases; of these, 1385 resulted from measles, 316 from scarlet fever, 706 from diphtheria, 918 from whooping-cough, 147 from enteric fever, and 3031 from diarrhœa and enteritis among children under 2 years of age. The death-rates from these diseases in the aggregate ranged from 0·5 in Hampstead and in the City of London, 0·6 in the City of Westminster and in Stoke Newington, and 0·7 in Kensington, in Chelsea, and in Lewisham, to 2·1 in Poplar and in Bermondsey, 2·2 in Southwark, 2·3 in Stepney, 2·6 in Bethnal Green, 2·7 in Finsbury, and 3·1 in Shoreditch. The 1385 fatal cases of measles were 665 below the corrected average number in the five preceding years; this disease was proportionally most fatal in Finsbury, Shoreditch, Bethnal Green, Stepney, Southwark, and Bermondsey. The 316 deaths from scarlet fever were 72 in excess of the corrected average number; the greatest proportional mortality from this disease was recorded in Kensington, Fulham, Stepney, Southwark, and Camberwell. The 706 fatal cases of diphtheria were 200 above the corrected average number; the highest death-rates

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING THE YEAR 1914.

(Specially compiled for THE LANCET.)

CITIES AND BOROUGHS.	Estimated population in the middle of 1914.	NOTIFIED CASES OF INFECTIOUS DISEASE.												DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.										
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Poliomyelitis.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping cough.	Enteric fever.	Diarrhœa and enteritis (under 2 years).	Total.	Annual rate per 1000 persons living.	Deaths from all causes.	Death-rate per 1000 living.†
LONDON	4,516,612	—	25,015	9118	1	779	18	393	4970	73	93	40,460	9·0	—	1385	516	706	918	147	3031	6503	1·4	64,994	14·4
West Districts.																								
Paddington	142,055	—	743	295	—	10	2	10	140	1	3	1204	8·5	—	4	8	20	25	3	79	139	1·0	1846	12·9
Kensington	170,817	—	962	200	—	11	2	6	165	2	—	1348	7·9	—	15	17	13	7	1	63	116	0·7	2242	13·1
Hammersmith	124,750	—	977	179	—	14	—	7	102	2	1	1282	10·4	—	41	5	16	21	5	67	155	1·3	1717	13·7
Fulham	158,849	—	1043	271	—	40	1	33	152	1	—	1541	9·8	—	31	21	22	42	9	126	251	1·6	2101	13·8
Chelsea	63,791	—	272	74	1	23	1	8	34	1	—	414	6·4	—	3	5	8	6	3	21	46	0·7	870	12·9
City of Westminste	152,346	—	844	186	—	49	2	10	111	1	1	1204	7·8	—	6	10	15	21	9	35	96	0·6	1936	13·2
North Districts.																								
St. Marylebone	112,892	—	434	235	—	37	—	9	67	1	—	783	6·9	—	2	9	18	20	6	59	114	1·0	1577	14·1
Hampstead	86,731	—	281	231	—	17	—	7	45	—	3	584	6·8	—	2	2	10	16	4	11	45	0·5	893	11·0
St. Pancras	212,497	—	1207	451	—	44	1	18	224	3	3	1951	9·1	—	56	18	30	51	4	121	280	1·3	3334	15·6
Islington	324,764	—	1851	661	—	75	—	25	335	7	8	2962	9·1	—	97	24	43	84	15	228	491	1·5	4923	14·8
Stoke Newington	50,454	—	264	93	—	4	—	3	49	—	—	418	8·3	—	1	3	4	6	—	16	30	0·6	661	12·5
Hackney	223,724	—	806	495	—	28	3	17	296	3	5	1653	7·4	—	106	9	39	53	8	127	342	1·5	3099	14·0
Central Districts.																								
Holborn	45,861	—	171	64	—	15	—	4	22	—	—	276	5·9	—	11	2	4	9	6	13	45	1·0	754	16·2
Finsbury	83,212	—	449	145	—	19	—	11	157	3	1	785	9·3	—	76	6	9	45	2	88	226	2·7	1652	19·4
City of London	17,129	—	85	31	—	5	—	—	10	—	—	131	7·4	—	1	1	2	3	1	1	9	0·5	239	14·0
East Districts.																								
Shoreditch	108,869	—	424	221	—	19	1	13	198	3	1	880	8·1	—	112	5	20	55	2	148	342	3·1	2075	19·6
Bethnal Green	127,662	—	654	376	—	18	—	9	305	2	7	1371	10·8	—	68	7	28	48	4	174	329	2·6	2034	16·6
Stepney	273,265	—	2089	885	—	47	—	33	403	4	27	3488	12·7	—	182	28	70	72	8	268	628	2·3	4539	17·3
Poplar	160,222	—	663	353	—	34	—	23	222	9	8	1312	8·2	—	66	10	34	31	6	195	342	2·1	2743	16·9
South Districts.																								
Southwark	186,941	—	1447	340	—	24	—	29	325	6	4	2175	11·6	—	95	22	37	59	2	207	422	2·2	3350	17·9
Bermondsey	124,213	—	581	216	—	8	—	5	123	5	1	939	7·6	—	81	8	18	14	3	140	264	2·1	2165	17·4
Lambeth	296,724	—	1754	560	—	50	3	23	237	5	10	2642	8·9	—	58	16	50	40	16	202	382	1·3	4319	14·3
Battersea	167,338	—	996	267	—	21	—	13	156	1	1	1455	8·7	—	50	11	17	26	3	122	229	1·4	2220	13·4
Wandsworth	338,998	—	1410	537	—	47	—	31	238	3	2	2268	6·9	—	26	13	41	56	5	148	289	0·9	3617	11·0
Camberwell	262,020	—	1541	458	—	29	1	24	270	4	5	2332	8·9	—	65	23	39	47	5	143	322	1·2	3589	13·6
Deptford	109,182	—	863	252	—	9	—	6	229	—	1	1359	12·5	—	51	9	25	9	3	91	188	1·7	1572	14·3
Greenwich	96,037	—	552	243	—	10	1	3	123	4	—	936	9·8	—	47	7	16	6	5	53	134	1·4	1412	14·5
Lewisham	172,433	—	955	406	—	51	—	7	129	—	1	1549	9·2	—	7	8	24	19	6	55	119	0·7	1836	10·7
Woolwich	122,836	—	693	387	—	15	—	7	101	1	—	1204	9·9	—	25	9	34	27	3	30	128	1·0	1679	14·1
Port of London	—	—	4	1	—	6	—	—	2	1	—	14	—	—	—	—	—	—	—	—	—	—	—	—

‡ncluding membranous croup.

† The death-rates are corrected for variations in sex and age constitution of the populations of the several boroughs, the population of England and Wales being taken as the standard.

from this disease were recorded in Bethnal Green, Stepney, Poplar, Southwark, Deptford, and Woolwich. The 918 deaths from whooping-cough were 164 fewer than the corrected average number; this disease was proportionally most fatal in Fulham, Islington, Finsbury, Shoreditch, Bethnal Green, Stepney, and Southwark. The 147 fatal cases of enteric fever were slightly in excess of the corrected average number; the greatest proportional mortality from this disease occurred in Fulham, the City of Westminster, Holborn, and the City of London. Diarrhœa and enteritis among children under 2 years of age was proportionally most fatal in Finsbury, Shoreditch, Bethnal Green, Stepney, Poplar, Southwark, and Bermondsey. In conclusion, it may be stated that the aggregate mortality in London last year from the principal infectious diseases, excluding diarrhœa, was 12·3 per cent. below the average.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Ulster Hospital for Women and Children.

AT the annual meeting of the friends of this institution held on March 18th it was reported that during the 12 months under review 4028 new cases had been treated in the different departments, and that 433 operations had been performed. Mr. S. T. Irwin has been appointed full surgeon in place of Mr. A. B. Mitchell resigned, and Dr. T. S. S. Holmes has been selected as gynæcological surgeon in room of Dr. Marion B. Andrews, resigned. Financially the total expenditure was £2034 2*s.* 2*d.*, while the income amounted to £2004 14*s.* 6*d.*, and with the balance carried forward from 1913 the hospital starts the year 1915 with a credit balance of £389 8*s.* 11*d.*

Ulster Medical Society.

At a meeting of the Ulster Medical Society held on March 18th Dr. T. S. Kirk read a paper on the Surgical Aspects of Hyperacidity. A discussion followed, which was made much more interesting and practical by the relation of the personal experience of two medical men who had themselves undergone surgical operation for gastric and duodenal ulcers.

The Drink Question.

The heads of the four largest religious bodies in Ireland (Roman Catholic, Protestant Episcopalian, Presbyterian, and Methodist) have sent to the Prime Minister a letter expressing the strong feeling throughout the country that the example set by Russia and France and, in a smaller degree by Germany, in dealing with the drink traffic should be followed by Great Britain and Ireland. They urge the closing of public-houses and clubs on Sunday, the abolition of the *bonâ-fide* Travellers Act, the prohibition of the sale of drink after 1 P.M. on Saturday and 6 P.M. on other days, and the doing away with "wet" canteens in military camps.

Cerebro-spinal Meningitis.

From Dec. 8th, 1914, to March 20th, 1915, there have been received into Purdysburn Municipal Fever Hospital, Belfast, 22 cases of cerebro-spinal meningitis ("spotted fever"). Of these, 12 were civilians and 10 came from the following military camps—viz., 7 from Randalstown, 2 from Clandeboye, and 1 from Lurgan. Of these 22 cases, 5 have died—that is, a mortality of almost 23 per cent.

The late Dr. Timothy Crowly.

Dr. Timothy Crowly, who died suddenly on March 7th, was educated at Queen's College, Cork, where he was a medical scholar and prizeman and graduated M.D., M.Ch. in 1872. He was medical officer of the Clonmoyle Dispensary District and the senior medical officer of the Macroom Union. With his professional brethren he was very popular. By his death a notorious murder case at Coachford, Cork, is recalled, for it was chiefly owing to the medical evidence of Dr. Crowly and Professor C. Y. Pearson that the murderer, a retired army surgeon, named Cross, was brought to justice for poisoning his wife.

March 22nd.

INDIA.

(FROM OUR OWN CORRESPONDENTS.)

Hospitals for Wounded Indian Soldiers.

Lucknow and Allahabad are amongst the stations at which special hospital accommodation has been made for the wounded Indian soldiers from the front, the arrangements being under charge of Surgeon-General H. G. Hathaway, Deputy Director of Medical Services in the 8th (Lucknow) Division. At Lucknow an Indian Troops Hospital has been fitted up in cantonments for 207 cases, while part of King George's Civil Hospital, to accommodate 50 cases, has been allotted for wounded Indian troops. At Allahabad preparations have been made for the reception of 75 cases altogether in two different hospitals, one in the Indian infantry lines and the second in the Indian cavalry lines. In the fitting up of the hospitals assistance was given by the Lucknow and Allahabad Committees of the St. John Ambulance Association, who have provided many articles to add to the comfort of the sick soldiers. Already two batches of cases have been received at Lucknow. A few weeks ago 46 from France and the Persian Gulf arrived, while on Monday last there came 118 further cases, chiefly from France, and including five Indian officers; both batches are comfortably installed, the first at King George's Hospital and the second at the Indian Troops Hospital. European and Indian residents in Lucknow have vied with each other in lending their motor-cars for the purpose of transport from the station to the hospital, while for lying-down cases ambulance tongas were available. The 118 who came on Monday, March 8th, arrived at night, and hot milk was given to them at the station before they started on their journey to hospital. Most of them, as already mentioned, received their injuries in France and are suffering from rifle or machine-gun wounds. There are also a number of cases of frost-bite.

Arrival of Wounded Soldiers at Bombay.

The hospital ship *Sicilia* arrived in Bombay on Friday, March 12th, with several hundred wounded Indian soldiers who have been fighting in France and Belgium. All the men had been in hospital in England and many of them were convalescent. As the ship entered the dock these latter crowded on to the rails anxious to get the first glimpse of their native land. A few amongst them had crutches or sticks, and some had an arm in a sling, but the majority showed no signs of the strenuous times they had gone through, if we except the peculiar look which is to be seen in the eyes of all soldiers who have been at hand-grips with death on the battle-field. The diversity of costumes worn by the men was great, each man having been allowed apparently to dress as his fancy dictated. Some had on well-worn khaki uniforms, others wore the *dhotar* or *kamis*, others again were attired in a mixture of Indian and European garb, and there was one man whose costume consisted of a pair of

army boots, socks, underpants, and vest, with a knitted cap on his head to complete the effect. In headgear, too, there were many different styles, ranging from the khaki-coloured pugree to the slouch hat of the Gurkha, while two young Gurkhas were proudly wearing the regulation British Army field cap. The serious cases were removed by the local Ambulance Corps, consisting mainly of the Parsi Overseas Brigade, to the Lady Hardinge War Hospital, or the Marine Lines Hospital, while the convalescents went to up-country stations in the ambulance trains.

Sanitary Reforms in Bombay.

After an interval of eight months the Bombay Government have issued their resolution reviewing the recommendations contained in the Government of India resolution on Indian sanitary policy, which was issued so far back as May 23rd, 1914.[1] The wheels of the administrative machinery, no doubt, move very slowly, and it is rather late in the day to issue orders on Jan. 7th, 1915, that the Indian Government's resolution of May last "should be forwarded for information to the Sanitary Commissioner for the Government of Bombay; the Surgeon-General with the Government of Bombay," and so on. It is pointed out that the suggestion of the Government of India as to the desirability of health officers and sanitary inspectors being attached to all municipalities is being adopted in many places in this Presidency. The Government have sanctioned grants-in-aid towards the cost of the entertainment of these officers in accordance with the scheme laid down by the Government of India. The Sanitary Commissioner has also submitted proposals for the regrouping of municipalities, for the classification of health officers and sanitary inspectors, and for the improvement of their pay and prospects. These proposals are under the consideration of the Government. As to the suggested constitution of provincial sanitary boards composed of officials and non-officials, such a board has recently been appointed, or rather reconstituted, in this Presidency, and has been authorised to sanction projects costing up to Rs.20,000, and to make non-recurring grants up to Rs.10,000. The Government of India laid down that every facility should be provided for people to obtain protection against plague through inoculation. The Local Government, it would appear, have been employing 24 sub-assistant surgeons for inoculation work in the Presidency. Besides this, a grant of Rs. 1000 is placed annually at the disposal of the Surgeon-General to meet expenditure in connexion with antiplague inoculation at the different hospitals. As regards special anti-tuberculosis measures, we are told that the question of the establishment of tuberculosis dispensaries and separate wards for tuberculous patients is under consideration of the Government. Special attention was invited by the Government of India to the importance of making sanitary surveys on broad lines, and it was suggested that systematic working plans should be drawn up with a view to mapping out the sanitary conditions of all important towns and localities in which sickness or mortality is abnormal. The Local Government have instituted a few such surveys, mostly malarial, in places like Karachi, Kharaghoda, Salsette, and in Kanara district. Apart from these surveys we are told that the Government have under consideration proposals for the appointment of district health officers who will relieve and enable the Deputy Sanitary Commissioners to undertake systematic sanitary surveys of the urban areas in their charges. The question of having in every important municipality a small, well-built segregation hospital is also sympathetically viewed by the Government, as also the need of adopting organised measures for the diffusion of elementary knowledge of the more common infectious diseases. The question of the contamination of milk-supply is stated to be engaging the attention of Government.

[1] THE LANCET, July 13th, 1914, p. 187.

Plague Prevention in Lahore.

The health officer of Lahore has put forward a scheme for cleansing the city with a view to the prevention of plague. He suggests that a scheme of house-to-house cleansing should be organised, and, to start with, five gangs of ten men each should be engaged to undertake the work of cleansing. They would remove rubbish, fumigate rooms, and expose to the sunshine all clothes and bedding. The sanction of the occupants would, of course, be necessary before any house was cleansed, and only men above the sweeper class should be employed.

The Pay of Civil Assistant Surgeons.

The sanction of the Government of India has been obtained to increase the pay of civil assistant surgeons appointed to be civil surgeons in Bengal. The present salary is Rs.350, rising to Rs.500. With effect from Sept. 21st last the pay will be Rs.400, rising to Rs.600.

Town Planning in Madras.

Evidently Professor Geddes and his sympathisers in England are not allowing the grass to grow under their feet because the *Emden* sent the Professor's preliminary collection of exhibits to the bottom of the sea. Professor Geddes tells us in an article published in the *Local Self-Government Gazette*, a newly started Madras journal, that soon after the unfortunate event an "emergency committee," including leading town-planners and architects, artists, collectors, and others interested, was spontaneously and independently formed in London and in Edinburgh, with correspondents throughout the United Kingdom, in America, and (as far as possible) upon the continent, to enable him to reorganise the exhibition; and in the interests of this committee funds are being appealed for. An exhibition, it is hoped, will be held in at least two of the three capitals of the presidencies, for even if it is upon a diminished scale it should be sufficient to afford useful illustrations of the main aspects of the movement, as it displays not only the geographical origins and conditions of cities, but also their historical development, from antiquity onwards, and the interaction of environmental and historical changes and other social factors, material and moral.

The St. John Ambulance and the French Red Cross.

The Consul-General of France in India has written conveying his grateful thanks to the Indian Council of the St. John Ambulance Association for the consignments of Red Cross gifts, valued at £240 sterling. The 12 cases containing the gifts will go by the next Messageries Maritimes steamer direct to France.

March 2nd.

SMALL-POX IN OLDHAM.—There are now 13 persons at Cinder Hill Hospital suffering from this disease.

Correspondence.

"Audi alteram partem."

LOUIS DANIEL BEAUPERTHUY AND MOSQUITO-BORNE DISEASES.

To the Editor of THE LANCET.

SIR,—"A prophet is not without honour save in his own country." The truth of this ancient dictum is generally recognised, but it would seem that it can no longer be considered applicable in the case of the unfortunate Dr. Beauperthuy. Sir Ronald Ross in THE LANCET of March 6th takes me to task for venturing to suggest that Beauperthuy's work has at least equal merit with that of King, and he calls to his aid Dr. Seidelin, who quotes chapter and verse to show that Beauperthuy has been overrated, that he is now, indeed, a Daniel come to judgment. It is all very interesting if not very profitable, and I think there is still something to be said for the French West Indian who, at least in his own day, had such a reputation as a physician and investigator that I understand he was specially asked by the British Government to take charge of an important leper settlement in British Guiana. This, however, is perhaps somewhat beside the mark, for here we are only concerned with Beauperthuy and his mosquito theories. After all, I did not claim very much for him. I only suggested that as Sir Ronald Ross in his interesting lecture dealt with some of the earlier pioneers, he might have mentioned Beauperthuy in the same breath as King.

Let me say at once that, like Sir Ronald Ross, my information as regards Beauperthuy was derived mainly from the writings of Sir Rubert Boyce, who quotes him freely, and from those of Dr. Agramonte. At the same time I had something more to go upon. For one thing, I had Sir Ronald Ross's own statements in his "Prevention of Malaria"; for another, I had recently travelled in some of the countries in which Beauperthuy lived and worked. Everywhere I found Beauperthuy's name held in respect and reverence. In Venezuela and Colombia alike he is regarded as having been a very great and far-seeing physician who has not received the meed of praise which was his due. Mere local celebrity, however, is not sufficient to place a man upon a pedestal, or even in a niche of the temple of fame, and so I only suggested a comparatively humble corner for Beauperthuy, one he might, perhaps, be permitted to share with King though not with Finlay and those others who paved the way for the final discoveries as regards the transmission of malaria and yellow fever.

Let us see what Sir Ronald Ross himself says. In "The Prevention of Malaria" (p. 16), when speaking of Finlay's work, which I, for one, would be the last to decry, he remarks: "Like Beauperthuy, he rightly conjectured the species of mosquito which carries yellow fever." Again, on the next page he mentions King's able paper and says of its author: "Like Beauperthuy, he held that the insects bring the poison from the marsh and inoculate it by their bites."

With all that Sir Ronald Ross says about the difference between the scientific speculator and the careful research worker I am in agreement, but, after all, it appears to me that Beauperthuy and King were, to all intents and purposes, in the same category, albeit it would appear that King marshalled his theories in a more logical and careful fashion. At the same time, 5 of his 19 arguments were unsound and 3 others distinctly doubtful, as Sir Ronald Ross is careful to point out in his criticism of them. This being so, and considering that Beauperthuy was an enthusiastic microscopist in days when a microscope was a rarity in the tropics, that he wrote 30 years before King, that it is probable he tried to supplement his hypotheses by some experimental work, and that he lived in regions where, at that time, it must have been very difficult to keep in touch with scientific progress and medical literature, I do not think I was far wrong in claiming that he might be ranked with King. Let those interested consult the quotations from his writings given by Boyce on pp. 24, 25, 98 *et seq.* of "Mosquito or Man," judge for themselves.

I can follow the arguments advanced by Sir Ronald Ross, but I confess that some of Dr. Seidelin's present difficulties. In the first place, I should say that Beauperthuy's idea that most infectious diseases are spread by ascaridæ (elsewhere he speaks of "acariens") or "insects" might well be accounted to him for righteousness, considering his day and generation and what we now know as regards plague, typhus, and many other communicable disorders. Again, Dr. Seidelin might take into account the difference between a starving and a gorged stegomyia. While I admit the former could rarely, if ever, be described as "silly" or "dull," the latter is often in such a condition that it makes no attempt to evade the avenging hand or flapper. It is at least possible that Beauperthuy was thinking of the gorged and sluggish insect.

Yet again, when discussing the views of Agramonte, Boyce, and Guiteras, Dr. Seidelin, on the whole, tends to support the last named. Now Guiteras, as Dr. Seidelin shows, takes Beauperthuy's "zancudo bobo" to be *Culex sollicitans*. Dr. Seidelin also thinks that Guiteras is correct in translating Beauperthuy's statement in such a way as to make the latter state that *Culex sollicitans* is *not* concerned with the spread of yellow fever and malaria. If this is what Beauperthuy meant, then Beauperthuy, so far as we know at present, was quite correct. It is certainly a curious way to belittle a man by showing that he was right, even though his correctness consisted in making a negative assertion. In this connexion surely Dr. Seidelin meant to quote Guiteras as saying "harmless," not "harmful"; otherwise his argument is still more involved.

I have written at some length, for my recent visit to the West Indies and South America stimulated my interest in Beauperthuy and his prophecies. At the same time had it not been for the war there would have been no need for me to undertake the defence of my very mild suggestion. My friend Dr. Paez, of Ciudad Bolivar, tells me that Professor Blanchard, of Paris, had prepared a special paper on Beauperthuy and his work for the *Archives de Parasitologie*. It would have seen the light ere now but for the outbreak of hostilities. I am sensible of the fact that the knowledge of the subject which I possess is not sufficient to enable me to class Beauperthuy beyond giving him an equal place with King in the Valhalla of the mosquito theorists. Hence I am content to leave the former and his claims to recognition in the hands of his distinguished countryman, although, thanks to the kindness of Dr. Paez, I hope soon to read Beauperthuy in the original and to find out how his "zancudo bobo" strikes me, and whether I agree with Guiteras or Agramonte.

I am, Sir, yours faithfully,

ANDREW BALFOUR.

Wellcome Bureau of Scientific Research, Henrietta-street, Cavendish-square, W., March 18th, 1915.

FOREIGN SERVICE AND THE AGE LIMIT.

To the Editor of THE LANCET.

SIR,—Sir Alfred Keogh in his letter in your issue of March 13th (p. 572) makes a stipulation in paragraph 4 which must limit considerably the numbers at his disposal. He says that except in special cases men of over 40 years of age are not sent overseas. It seems that no distinction is made between two entirely different branches of the medical service in France. On the one hand, there is the work actually at the front, on the lines of communication, &c.; and on the other, the work at the base hospitals. Perhaps for the former, where severe conditions are inevitable, an age limit of 40 is desirable, but for work at the base hospitals surely the services of men of experience, even though past the magic age, are not only welcome but indispensable. If a strict age limit is made it will necessarily follow that the base hospitals will be staffed by young, inexperienced men, who, as compared with the civil hospital standard, are not surgeons at all, and yet they must decide questions and perform operations that require years of training. My own experience of this campaign in France assures me that the work of a surgeon at the base hospitals is not nearly as trying as the daily work of an operating surgeon at home, and could easily be done by men between 40 and 60, an age when experience and matured judgment are at their best. If this suggestion of supplying older men in the base hospitals could be adopted it would release a large number of younger men, who would, I know, jump at the chance of getting right to the front.

I am, Sir, yours faithfully,

Harley-street, W., March 16th, 1915. H. W. CARSON.

TREATMENT OF PAINFUL FROST-BITE.

To the Editor of THE LANCET.

SIR,—The problem of how best to treat painful frost-bitten feet is one which doubtless has caused those in charge of military wards some anxiety.

The best remedy I have found to be the following:—

℞ Cocainæ ... ... gr. viii.
Ol. olivæ ... ... ℥iv.
Liq. calcis ... ... ℥iv.

Which simply means carron oil and cocaine. A small quantity is rubbed into the feet twice daily, special attention being given to the toes. The feet are massaged with it for a few minutes, afterwards being wrapped up in cotton-wool. It is an improvement to add 1 ounce of liquid paraffin to 4 ounces of carron oil. By this addition it prevents it oxidising so quickly and also from drying up so rapidly, and makes it less liable to rancidity. When the oil dries on the feet the following dusted on is an excellent powder: camphor, gr. xxxv.; zinc oxide and pulv. amyli, āā ℥ss.

In all my recent cases in which there has been no ulceration it has been entirely successful; one advantage of this form of treatment is that the patient is able to sleep without any narcotic. When the acute stage passes off, the carron oil and cocaine are mixed with equal parts of carbolic oil, the percentage of which is increased as the pain decreases. Another very important consideration is the fact that the men can be the more quickly put on the convalescent list, thereby enabling them to get back sooner to the front.

I am, Sir, yours faithfully,

W. CHARLES DAVIS.

David Lewis Northern Hospital, Liverpool, March 19th, 1915.

THE ANCESTRY OF EHRLICH.

To the Editor of THE LANCET.

SIR,—In THE LANCET of Feb. 27th (p. 422) Sir W. Watson Cheyne is reported as saying, "Whatever may be thought of German Kultur in general Professor Ehrlich is the great pioneer in this work [chemotherapy]. ..... I look upon Professor Ehrlich as the greatest medical asset that the world possesses at the present time."

Now, I hope you will pardon me for pointing out that although possibly a *naturalised* German, Professor Ehrlich is stated by Dr. Garrison in his "History of Medicine," p. 95, as springing from a more ancient and more famous race—viz., the Hebrews—and Dr. Garrison also cites Cohnheim, Metchnikoff, Fränkel, Friedländer, and Neisser as belonging to the same ancestry. As Disraeli says in "Lothair," "Race is everything."

I am, Sir, yours faithfully,

Corris, Merioneth, March 19th, 1915. E. C. B. IBOTSON.

A PLEA FOR CONSIDERATION.

To the Editor of THE LANCET.

SIR,—Your leading article with this title prompts me to write this letter, though I have not the honour to belong to the profession by which you are almost exclusively addressed.

When the Insurance Act began to increase the emoluments of practice for some practitioners who joined the panels the cry that "the doctors" were getting overpaid was raised in many quarters by persons who equally would have been opposed to the raising of the salaries offered for those posts which are now so difficult to fill. To those who think that the medical profession has been, or is ever likely to be an overpaid calling, I may commend the careful consideration of the work now being done by it on and in connexion with military service, the demand for more men to do that work, and the shortage of medical men in civil practice.

The proposition is that if the practice of medicine had offered better prospects of livelihood to the able young men who have had to choose callings for themselves during the past 30 years, there would have been a proportionately larger supply to draw upon in this great crisis of our national life. Grudgingly paid fees of the smallest possible dimensions, and salaries fixed at the lowest price to which competition can reduce them, have imposed upon many the necessity for arduous work by night and day before the bare necessaries of life are earned, and have combined, under the inexorable law of supply and demand, to keep down the numbers of the medical profession in time of peace. In time of war it is too late to add to those numbers, because the training of the physician or surgeon is a matter of years not of months, and the numerical insufficiency now realised can only be made up for by strenuous devotion to duty, on the one hand, combined with reasonable patience and forbearance on the part of the public.

Neither devotion to duty nor patience will be relaxed at a time when our country with every resource at its command is fighting for the preservation of its national existence; but thoughtful citizens might well consider, when the war is over, whether a shortage of medical men is a safe national position. And if they find that it has its risks then will be the time to take the obvious measures of precaution.

I am, Sir, yours faithfully,

March 22nd, 1915. A LAWYER.

Obituary.

WILLIAM MURRAY DOBIE, M.D. EDIN., M.R.C.S. ENG.

Dr. William Murray Dobie, of Chester, who died, aged 86, on March 12th, was the son of Dr. W. Johnson Dobie, of Graysford. He was born in Liverpool and received his medical education at Edinburgh, graduating M.D. at the University in that city in 1849 with the gold medal in surgery. He became M.R.C.S. Eng. in 1854. At the Edinburgh Royal Infirmary he held various residential appointments and had the advantage of studying under Syme, forming lasting friendships with Lister and Murchison. After visiting Paris, Berlin, and Dublin he commenced practice in Chester in 1855, in which year he married Janet, daughter of Mr. William Smith, of Rossett, by whom he had five daughters and five sons. Three of the sons are now medical practitioners in Chester. During the cholera epidemic in 1867 Dr. Dobie rendered great service in checking the ravages of the disease, and in connexion with this subject wrote an article on chlorine in the treatment of Asiatic cholera and choleraic diarrhœa for the *Edinburgh Medical Journal*. In 1875 he was elected honorary physician to the Chester Infirmary, and on his resignation in 1895 was made consulting physician. He was also honorary consulting physician to the Wrexham Infirmary and to the Royal Alexandra Hospital, Rhyl. From 1893 to 1895 he was President of the Chester Society of Natural Science and Literature.

In 1896 Dr. Dobie was publicly presented with his portrait in oils, painted by Mr. W. W. Ouless. The then Duke of Westminster, who was supported by all the leading inhabitants of Chester and district, made the presentation. He received the freedom of the city of Chester, of which he was a magistrate, in 1897. He was much attracted by microscopical and astronomical studies, and among his early contributions to science were the discovery and description of a new crater in the moon which bears his name. Dr. Dobie, it will be remembered, attended Gladstone in his last illness.

WILLIAM GILBERT DICKINSON, M.D. DURH., L.R.C.P. LOND., D.P.H. ENG., M.R.C.S. ENG.

A STRENUOUS life reached its termination on March 19th, at Clifton, Bristol, where Dr. William Gilbert Dickinson had been living for a year or so since he retired from practice at Portishead. He received his medical education at St. Thomas's Hospital, and from 1875, when he obtained the Diploma of M.R.C.S. Eng., took great interest in the administration of the affairs of his College. He belonged to the Association of Members founded in 1884, and was largely instrumental in founding the Society of Members, for whom he acted as honorary secretary for 15 years, only resigning in 1909, when he left Putney for a less exacting practice at Portishead. For this long period he was one of the leaders in the demand for reform in the Royal College of Surgeons of England, but he was ever a courteous controversialist. Any and every movement for the advantage of his fellow practitioners met with his hearty support. He was therefore to be found concerned in the management of the Medical Sickness Society and of the London and Counties Medical Protection Society. He was the author of many papers on the better organisation of the medical profession.

DAVID MOORE ALEXANDER, M.D. LIVERP.

Dr. David Moore Alexander, who died on March 18th at the early age of 37, after having been ill for only a few days with pneumonia, was the only son of Dr. William Alexander, consulting surgeon to the Royal Southern Hospital, and was educated at Liverpool College and at the University of Liverpool. After graduation he studied at the Pasteur Institute in Paris. He was subsequently appointed assistant lecturer in bacteriology at the University and bacteriologist to the Liverpool corporation. He carried out several researches for the Local Government Board, the most important being in connexion with the bacteriology of infantile diarrhœa. He was secretary to the pathological meetings of the Liverpool Medical Institution, and he had just obtained a temporary commission in the Royal Army Medical Corps, and was proceeding to the front with the Liverpool Mobile Hospital as its bacteriologist. The loss of his scientific attainments to the city and the University is a great one, and by numerous friends he will be missed sorely.

THOMAS RAWDON GLYNN, M.B., B.C. CANTAB.

THE death occurred on March 9th of Dr. Thomas Rawdon Glynn at the early age of 35 years. He was the second son of Dr. T. Robinson Glynn, professor of medicine in the University of Liverpool, and brother of Dr. Ernest E. Glynn, the professor of pathology there. He was educated at Liverpool College and the University of Cambridge. After graduating in medicine in 1910 he held the usual resident appointments at the Liverpool Royal Infirmary, and later was elected physician to the Hospital for Consumption and Diseases of the Chest, Liverpool. Some years ago he discovered that he was suffering from a malady which would in all probability put a term to his existence in a few years. He determined, however, that he would not allow this knowledge to interfere with his professional aims and usefulness, and while not neglecting rational precautions to preserve his health he gladly undertook whatever work came to his hand. He continued at work until a few weeks ago, when he went to stay at his father's country house, Nerquis Hall, Flintshire, where he passed peacefully away. He is mourned by many friends, and his persistence in work almost up to the last without any complaining—in fact, few but his relatives knew of his illness—was a fine example of courage.

ERRATUM.—The age of Sir George Turner was wrongly stated in our obituary notice last week. A personal friend of his points out that Sir George Turner was born on Feb. 10th, 1848. He was therefore in his 68th year at the time of his death.

TUBERCULOSIS DISPENSARY FOR TORQUAY.—At the last meeting of the Devon County Council it was reported that a provisional arrangement had been come to for settling the action which had been commenced with a view to restraining the county council from using the residence, "Larchmont," Torquay, as a dispensary for tuberculosis. The council has decided to reimburse the legal costs of the owners of the property, which amount to about £117, and to erect a boundary wall on both sides of the premises. As already mentioned in THE LANCET, there has been much local opposition to the scheme, so that the agreement is regarded as a satisfactory termination of a very troublesome matter.

THE BELGIAN DOCTORS' AND PHARMACISTS' RELIEF FUND.

THE demands on the Fund made by the needs of refugee doctors and pharmacists and their families and dependants have been a little heavier of late, one reason being that the need for clothes is growing with the length of exile.

It has been possible to find occupation for a certain number of Belgian doctors in British civilian practice, when the Fund has defrayed the expenses of registration; but the total of refugee doctors has been decreased by the absorption of a certain number of them into the Belgian army, where it is understood there is still need of men to take medico-military commissions. Those Belgian medical men whose age, health, or private engagements prevent them from serving their cause in this way would find it much easier to obtain posts in this country if they could speak a little English, and some surprise has been expressed that so few of them have as yet taken advantage of the facilities which have been offered in this direction.

The week's subscriptions include additions to many lists that have been open for some time, and in certain cases the aggregate of the donations up to date is published.

MANCHESTER AND DISTRICT.

Dr. E. Brockbank announces that £473 6*s.* 6*d.* had been received from medical men and the general public in Manchester and the district up to March 21st, and £10 4*s.* 11*d.* from the pharmacists. This local list will now close, and Dr. Brockbank, the secretary (Northern Assurance Buildings, Albert-square, Manchester), will be glad to receive any subscriptions immediately, and to hear if any of the contributions have not been acknowledged in the journals. The following additional subscriptions have been received:—

	£	*s.*	*d.*
Dr. J. B. Dalton, Dr. A. E. Finney, Mr. J. Gilmour, Mr. J. H. Hacking, and Mr. J. N. Platt	4	4	0
Dr. W. White	2	2	0
Dr. P. L. Pearce	1	1	0
Dr. O. H. Woodcock ...	1	1	0
Mr. H. L. Whitestone ...	1	1	0
Dr. G. R. Gordon	1	1	0
Mr. W. P. Lynn	1	1	0
Dr. J. H. Godson	1	1	0
Dr. C. Hawkins Craig ...	1	1	0
Dr. H. Mackenzie	1	1	0
Dr. F. C. Scotson	1	1	0
C. N.	0	7	0

THE WEEK'S SUBSCRIPTIONS.

The subscriptions received by Dr. Des Vœux up to Tuesday evening last, in addition to those previously acknowledged, and not including money collected by certain local funds, and the Scottish and Irish Funds, are as follows:—

	£	*s.*	*d.*
Shropshire and Mid-Wales Branch, B. M. A. (sixth donation, total £45 2*s.* 6*d.*)			
Dr. L. E. Dickson ...	0	10	6
"J. M."	25	0	0
Dr. Wm. B. Jack	1	1	0
Kesteven Division, B. M. A. (per Dr. C. H. D. Robbs, Hon. Sec.)—			
Dr. T. T. Kelly	1	1	0
Dr. J. D. Campbell ...	1	1	0
Dr. F. de Havilland Hall (third donation, total £73*s.*)	2	0	0
Société Belge de Médecine en Angleterre (per Dr. Clément Philippe, Pré-ident)			
Dr. Linossier, Dr. Jardet (Vichy), Dr. Langenbayen (Mentone)	49	2	6
Brussels Medical Graduates' Association (sixth donation, total £124 12*s.* 6*d.*) (per Dr. Major Greenwood, Hon. Treas.)...	2	0	0
South-West Wales Division, B.M.A. (per Dr. D. R. Price, Hon. Sec.)—			
Anon.	0	10	0
Norwich Division, B.M.A. (third donation, total £51 3*s.*) (per Dr. G. P. C. Claridge, Hon. Sec.)—			
Mr. F. P. Bush	3	3	0
Mr. E. W. Everett ...	2	2	0
Mr. B. K. Nutman ...	2	2	0
Mr. F. Preston	2	2	0
Dr. Henry Watson ...	5	5	0
Birmingham Local Committee (twelfth donation, total £328 1*s.*3*d.*) (per Dr. R. Saundby)—			
Dr. F. Bonner Feast (proceeds of Whist Party)...	7	7	6
North of England Branch of Belgian Doctors' and Pharmacists' Relief Fund (fourth donation, total £259 18*s.*) (per Dr. James Don and Mr. A. S. Percival, Hon. Secs.)—			
Dr. J. S. McCracken ..	3	3	0
Dr. C. F. D. Hammond	0	10	6
Dr. L. G. Dillon	2	2	0
Dr. Jas. Hudson... ...	5	5	0
Dr. J. MacFadyen ...	1	1	0
Dr. and Mrs. D. Wells Patterson	2	2	0
Dr. J. R. Lownds ...	2	2	0
Dr. H. Brunton Angus	5	5	0
Dr. J. Allan Brand (part proceeds of sale of Motor Car)... ...	20	14	0
Dr. R. Dagger	2	2	0
Dr. A. M. Martin ..	3	3	0
Dr. Chas. J. Gibb ...	2	2	0
Dr. H. Paige	1	1	0
Dr. Neil Maclay... ...	5	5	0
Dr. E. L. Prall	1	0	0
Dr. Moffat Young ...	1	1	0
Dr. J. W. Smith and Son	5	5	0
Dr. L. A. H. Bulkley	1	1	0
Dr. Wm. Robinson ..	3	3	0
Dr. Robert Forsyth ...	2	2	0
Dr. A. Dougall	1	1	0
Dr. Charles Stuart ...	1	1	0
Dr. W. S. Dickie... ...	2	2	0
Dr. S. G. Mostyn ...	1	1	0
Dr. J. J. French... ...	1	1	0
Dr. H. Kershaw	3	3	0
Dr. G. F. Longbotham	2	2	0
Dr. A. Paget Steavenson	2	2	0
Dr. P. J. Sheely ...	2	2	0
Dr. A. Bruce Low ...	1	1	0
Dr. Geo. J. Williams	1	1	0
Mrs. Priestman	0	10	6
Dr. J. McBain	1	1	0
Dr. John Galloway ...	1	1	0
Dr. J. A. Naismith ...	2	2	0
Dr. R. J. Weldner ...	2	2	0
Dr. Adam Wilson ...	3	3	0
Dr. R. A. Bolam... ...	3	3	0
Dr. M. Caldwell	1	1	0
Dr. G. Y. Caldwell ...	2	2	0
Dr. A. Hay Bower ...	1	1	0
Dr. Wm. Bower	1	1	0
Dr. A. D. Kelly	1	1	0
Dr. Angus Campbell ...	1	1	0
Dr. John Waldy	2	2	0
Dr. H. P. Bennett ...	1	1	0
Dr. H. St. J. Boswell...	1	1	0
Dr. D. W. Inglis... ...	1	1	0
Dr. Wm. Jaques... ...	1	1	0
Dr. Andrew Smith ...	2	2	0
Oxford and District Chemists' Association (per Mr. H. C. Goodall)	2	2	0
Mr. J. A. South	1	1	0
Gateshead Pharmacists' Association, collected by (per Mr. A. D. Wyllie)—			
Mr. A. B. Beatton ...	0	10	0
Mr. Jas. Chapman... ...	1	1	0
Bradford Pharmacists' Association (per Mr. W. I. Jolly)	10	0	0
Mr. G. E. M. Knight ...	1	1	0
Mr. F. G. Knight	1	1	0
Mr. J. Evans (proceeds of Dependants' Prescriptions)	0	5	0
Mr. J. A. Rees...	1	1	0
Mr. G. V. Musson	0	5	0

Subscriptions to the Fund should be sent to the treasurer of the Fund, Dr. H. A. Des Vœux, at 14, Buckingham-gate, London, S.W., and should be made payable to the Belgian Doctors' and Pharmacists' Relief Fund, crossed Lloyds Bank, Ltd. £8250 had passed into the treasurer's hands by Tuesday last, the sum not including the Scottish and Irish and several large local funds.

Last week an acknowledgment in the subscription list as follows: Messrs. Benger, Ltd., £26 5*s.* 0*d.*, should read, Messrs. Benger's *Food*, Ltd., £26 5*s.* 0*d.* Mr. and Mrs. Dinphie, £5, should read, Mr. and Mrs. *Dunphie*, £5.

THE APPEAL FOR SURGICAL INSTRUMENTS.

The Master of the Society of Apothecaries begs to acknowledge with thanks the receipt of surgical instruments kindly contributed by the following gentlemen since the publication of the last list:—

Dr. Ick Hewins, Tokomaru Bay, New Zealand; Dr. C. E. Hardyman, Bramerton, Norwich; Dr. James Hudson, Newcastle-on-Tyne; and the Library of the Manchester Medical Society (per Dr. Brockbank).

DONATIONS AND BEQUESTS.—The late Miss E. Addiscott, of Clifton, has bequeathed £1000 each to the Bristol Children's Hospital, the Bristol Dispensary, and the Bristol Medical Mission.—Under the will of the late Mr. William Edgar Allen, of Sheffield, the Hospital for Consumption at Ventnor will receive £1000 and the Mission to Lepers in India will benefit by a similar amount. The University of Sheffield benefits largely under the will, £5000 being placed at the disposal of the applied science department, besides bequests for the founding of scholarships and exhibitions.—By the will of the late Sir J. Donaldson a fund, to be called the Lady Donaldson Fund, will be established in the St. Andrews University for aiding students attacked by illness or labouring under disease during attendance at the University.—The following legacies have been left under the will of the late Mr. Charles Vivian, of Bedford: £5050 to the Middlesex Hospital, £4000 each to the London Hospital for general purposes and Dr. Barnardo's Homes, £3000 to the Bedford County Hospital, and £2000 to the Cancer Hospital, Brompton.

The War.

THE CASUALTY LIST.

THE casualties among officers in the Expeditionary Force reported since our last issue include the names of the following medical officers:—Killed: Lieutenant W. T. McCurry, R.A.M.C., and Lieutenant J. R. Waddy, R.A.M.C. Died of wounds: Lieutenant D. C. Turnbull, R.A.M.C. Wounded: Captain F. O'D. Fawcett, I.M.S., Captain J. Taylor, I.M.S., Lieutenant F. C. Davidson, R.A.M.C., and Lieutenant A. G. Biggam, R.A.M.C.

THE INCREASED PREPARATIONS FOR THE WOUNDED.

Clearly, before many months, or perhaps weeks, have passed the accommodation for the sick and wounded from the front will have to be considerably increased, and in addition to the provision made at general hospitals other institutions all over the country for this purpose are being requisitioned by the War Office. Although the demand for sick and wounded accommodation will be great, we have every confidence that the need will be adequately met. But the proper housing of the sick and wounded is only one of the problems: there remains the question of nursing. For many cases any woman possessed of the nursing temperament may, with a short training, become an efficient nurse to work under the supervision of a fully-trained chief, and a suggestion by Lord Knutsford that the best way of meeting the increased demand for nurses would be for hospitals to take probationers and begin their training at once deserves earnest consideration. The London Hospital, he says, has already taken 70 short-time probationers who "will be of infinite use to work under trained supervision in any of the new hospitals which are to be opened." This will be only extending the condition of things which normally prevails, inasmuch as probationers in our large hospitals are always working under trained nurses. Those who have already received some training under the Voluntary Aid schemes and under the Red Cross, as well as private first-aid students, should make valuable nurses with a short hospital training; and if they were content to confine their services to this country and not aspire to work abroad, where trained supervision is not so easy to provide, much good might result. It is not expected that such nurses should continue in this vocation after the war, but the knowledge which they would have gained would be of incalculable value in their own homes, and perhaps prove an efficient aid in promoting the health and well-being of the country. Among minor problems, a larger use of partially trained nurses obviously necessitates a better classification of the wounded as they are drafted into the various institutions; also there is the question of housing the nurses themselves. But the whole question, or rather series of questions, we doubt not will be easily solved in the course of events by the common-sense of the authorities, combined with the benevolence and goodwill of the community generally.

THE ITALIAN MEDICAL SERVICE.

An important discussion took place in the Italian Senate on March 13th upon this subject. The Minister Zupelli stated that the civilian members of the profession would be called upon; that they would be given temporary rank of lieutenant or captain up to 36 years of age, and higher ranks in the base hospitals beyond the fighting line; that university clinics with all their personnel would, wherever possible, be mobilised *en bloc* for the reserve hospitals, and that the personnel and material of the Croce Rossa would be placed under the command of the Army Medical Department. The Army Medical Staff consists at present of 800 officers on the active list, 1800 on the auxiliary list, and 1800 between the Territorial and reserve establishments. This means, as Senator Maragliano pointed out, a shortage of some thousands of medical officers in the case of a European war. Senator Zupelli alluded to the outbreak of cerebro-spinal fever in certain garrisons, but declared that there had been no fresh cases for some days. There had been 350 cases in all, with 140 deaths. Antityphoid inoculation has been made compulsory; it is expected that all the troops will have been inoculated by the middle of April. Provision is making for the adequate supply of antitetanic serum and anticholera vaccine. A number of the universities are holding courses in military surgery and hygiene for practitioners and senior students.

THE SCOTTISH MEDICAL SERVICE EMERGENCY COMMITTEE AND MEDICAL OVERPRESSURE.

This committee has issued the following memorandum. The Director-General of the Army Medical Service, in his public letter of March 10th, makes the following statement: "The need for medical men both for home and foreign service is acute. We want every qualified man who is physically fit and willing to serve." This statement must convince everyone of the seriousness of the problem of medical supply, civil as well as military. As a contribution to its solution the Emergency Committee, in the interest of the nation, desire to make through the press the following appeals:—

1. *To the public.*—It will materially help to relieve the great strain now imposed upon the medical practitioners remaining at their posts throughout the country, many of whom are at present working 15 to 16 hours a day, if patients and their friends will make a point of sending messages for the doctor as early as possible in the morning, so that the doctor may arrange his daily round in the way most economical of time. In many parts of the country this practice has already been partially adopted. We ask everyone to give effect to the suggestion. Where the case is not an urgent one, and a visit on the next day would suffice, this fact should always be stated in the message.

2. *To the local educational authorities.*—Regular medical inspection of school children is very important, but it is not nearly so urgent as attendance on patients who are dangerously ill. These have clearly the first claim for medical care. We appeal to school boards and other educational authorities to release entirely, or in part, those of their medical officers who are willing during this emergency to resume general medical work for the public. We have reason to anticipate that this proposal will not be received unsympathetically by the Scotch Education Department.

3. *To retired doctors of the profession who are still* (in Sir Alfred Keogh's words) "*physically fit and willing.*"—The Emergency Committee will be happy to hear from these, and will endeavour to give them opportunities for service in circumstances that will not involve an excessive strain.

4. *To the younger lecturers and assistants in the medical schools.*—At this time of the year, when the winter session closes, the teachers usually go for a week or ten days' well-earned holiday. We ask them this year to substitute a change of work for the customary holiday, and to offer their help to country colleagues in difficulty. Many practitioners, especially in rural districts, have been overworked for months, and some of them are breaking down under the strain. The temporary help of a professional brother from the schools

would ease this strain, while the stimulus of his timely coöperation would act as a useful tonic for the trying days that are still to come.

The Emergency Committee is confident that their action in making these appeals will not be misunderstood. The times require the mobilisation of all our professional forces. All are desirous to help if they knew how. The function of the Emergency Committee is to indicate how and where help may be most effectively afforded. Communications should be addressed to the Convener, Emergency Committee, Royal College of Physicians, Edinburgh.

THE ENGLISH HOSPITALS UNDER FRENCH MILITARY AUTHORITY.

Three hospitals, which come under the heading implied by this title, were founded in France, of which two, one at Nevers and one at Limoges, continue their work. The third, the hospital at the Hotel Majestic in Paris, was closed some weeks ago. The hospitals are largely staffed through the Union des Femmes de France, one of the three branches of the Croix Rouge Française, to which body the defunct Hotel Majestic hospital definitely belonged. The hospitals at Limoges and Nevers, ranking as French military hospitals under the chief French medical officer of the XIIth Army Region for Limoges and of the VIIIth Army Region for Nevers, are subject to inspection by the French military medical authorities, and have French officials attached to them. We are indebted to Dr. Haden Guest for notes as to both hospitals during the period of their activities, signed by their principal medical officers.

Hôpital Militaire Anglais, Limoges.—This hospital, installed in the School of Art of the Musée Debouche, Limoges, was opened on Oct. 10th, 1914, with accommodation for 150 patients nominally, although frequently it has accommodated 160 and more. It is a four-storeyed building, each floor of which is divided into three main halls with smaller rooms at each end of the ground, first, and second floors; annexed to the ground floor is a glass structure which has been utilised as a receiving ward. The smaller rooms at each end of the ground floor are used as the bureau of the médecin-en-chef and the housekeeper's room respectively, while the front hall has been converted by the erection of wooden partitions into dispensary, linen-room, clerk's office, and storeroom. The second hall is the dining and recreation room for the medical staff, and the third hall is the mess-room for the French employees of the hospital. On the first floor the smaller rooms are used as operating theatre and matron's room respectively, and the larger *salles* are used as wards; a similar arrangement holds good on the second floor, except that the small rooms are used as X ray room and house surgeon's room. The whole of the top floor is taken up by nurses' dormitories. The kitchen is detached from the hospital, and outbbuildings have been utilised as mortuary and storeroom for the kits of wounded soldiers. Along the front of the first and second storeys run two long corridors, at either end of which are lavatories for the use of patients and staff. The building has been admirably adapted for the purpose of a hospital; while Limoges itself is on the main line from Paris to Bordeaux, 400 kilometres from Paris.

When the hospital was first opened considerable difficulty was experienced in transporting patients from the firing line to Limoges, but men are now brought in direct from the front within 30 to 40 hours. The local expenses of running the hospital amount to about 600 francs, or £24 a day, about half of which is provided by the French Government for the maintenance of patients; to this must be added the administration expenses incurred in Paris and London. More than half of the total local expenses consist of the cost of provisions. Since the local expenses for December were about 20,000 francs, January 19,000 francs, and February 16,000 francs, it will be seen that a vast amount of good work is being done at a minimum of expense. The working expenses have been reduced to the lowest possible figure compatible with the highest state of efficiency, and I think this hospital reflects, and will continue to reflect, much credit on the Wounded Allies Relief Committee. The following figures give the work of the hospital:—Patients treated in hospital since the opening, Oct. 10th, 1914, to Feb. 28th, 1915, number 397, of whom 247 have been discharged, 142 are still in hospital, and 8 have died. Of the total number treated in hospital, 4 were British (all discharged), 12 were African natives, and 381 were French. Of the 247 discharged from hospital, 18 were finally discharged from the army (active service), amputated or trephined; 49 were discharged to duty after 8 days' furlough; and 180 were discharged with 1 to 2 months' furlough. The number of discharges per month were: October, 4; November, 52; December, 82; January, 67; and February, 42.

Hôpital Militaire Anglais, Nevers.—Lieutenant-Colonel Charles Boyce, R.A.M.C., médecin-en-chef, writes of one month's work as follows:—"I arrived in Nevers on Jan. 24th. On the previous day a large convoy of wounded and sick numbering 79 cases were received. This number exceeded the bed accommodation by 14. There was apparently some misunderstanding, and the railway military staff, who distribute the wounded to the various hospitals, sent more cases than were asked for. Some spare beds were found, and on these and mattresses put on the floors the extra number were placed and the difficulty overcome. A considerable number of the wounded, many of whom came from the trenches in the Argonne, were suffering from very severe wounds. Their wounds were mostly resulting from high-explosive shells and shrapnel, and of these three died during the month. One was moribund on admission and died from gas gangrene, the second was due to pyæmia occurring after amputation for gangrene, and the third was wounded by a ball in the pelvis. The projectile could not be found; abscesses formed, with purulent absorption, exhaustion, and death. All the cases suffering from wounds were septic. Among those who arrived on Feb. 15th were two cases of men who had suffered merely from abrasion of the skin over the knee, but each of these was septic and with high fever. The wounded had passed, in many cases, several days between the receipt of their wounds and admission here, and only one dressing had been applied on arrival here; the dressings were soaked with discharges and very offensive.

The arrangements for the removal of the wounded from the train are excellent; the siding from the railway station at Nevers, by means of which the trains convey the wounded to the hospital, is most convenient and saves the patients much extra fatigue. On the occasion of the arrival of the wounded on Feb. 15th all the patients were transported to the hospital, their clothing taken off, they were put in bed, and were supplied with hot beef-tea in two hours—a very fine performance, which shows how well the nurses and orderlies worked. On this occasion we had 36 patients, many of whom were very severely wounded. Fresh dressings were applied to all cases requiring them, pieces of shrapnel lying superficial were removed or urgent operation was performed as soon as possible after admission, and on this occasion everyone was not attended to until 2.30 A.M. We have had a considerable number of medical cases, the greatest being in the convoy which arrived on Jan. 23rd. Amongst these were 6 cases of typhoid fever, one of whom also suffered from a fractured patella (he is now convalescent from both); 3 cases of pneumonia; several of bronchitis and lumbago, the latter the result of standing for long hours in cold water. Several cases were sent of such a trifling nature that they ought to have been forwarded to a convalescent hospital and not here.

On Jan. 24th there were 114 patients in the hospital. Between Jan. 24th and Feb. 24th 64 patients were discharged and 49 new cases admitted. Of the latter, 36 came in one convoy by train; the remainder, 13 in number, were admitted from other hospitals in Nevers. The military authorities asked us to take them in, either for operation or to relieve pressure on their hospitals. On Feb. 25th I discharged 6 cases and admitted by special request from the médecin-chefs of two hospitals, 3 cases of appendicitis and 3 men with projectiles on their bodies for X ray and operation. The first wounded arrived on Dec. 6th,

1914, and from that date until Feb. 24th, 1915, 108 operations were performed. Between Jan. 24th and Feb. 24th, the month under review, 52 were performed. These were distributed on the various floors of the hospital as follows:—

	Total.		From Jan. 24th to Feb. 24th.
A.	35	A.	19
B.	43	B.	23
C.	30	C.	10
	108		52

The number of patients treated at the hospital since its opening has been 239; of these 148 have been discharged and 4 have died."

THE EFFICIENCY OF THE GERMAN ARMY MEDICAL SERVICE.

A Swiss correspondent writes:—A party of Swiss and Italian doctors, all connected with the Red Cross Societies of their respective countries, have just returned from a prolonged visit to Germany and the Western battle-front, and they visited Berlin, Sedan, Saint Quentin, Brussels, and the town—naturally not named—where the German General Staff has its present headquarters. They were received everywhere with the greatest courtesy, and they express their delight at their visit and their admiration for the German Army Medical Service, and the impressions recorded by one of the party, Professor Baldo Rossi, are probably shared by the others. He says:

The organisation of the German medical service is simply wonderful. Nothing seems to have been left to chance, but, on the contrary, every detail seems to have been thought out carefully. At Berlin a large number of public and private buildings—theatres, cinematograph houses, police stations—have been handed over to the Army Medical Department, while various types of hospitals are situated at different points along the main roads which link up the capital to the fighting line. The wounded are not removed from the trenches until evening, as there is the danger of transports being attacked in the daytime by the enemy. Medical assistance is, of course, rendered immediately, and the German trenches, moreover, are not uncomfortable places. At dusk ambulances drawn by horses reach the trenches and the wounded are transferred into them. Horse ambulances are used because the roads are frequently too difficult for automobiles, and because, even were the latter used, the noise of the motors and the glare of the headlights would attract the enemy. The wounded are first taken to the medical stations situated about five miles in the rear of the trenches, each of which is under the supervision of nine doctors, of whom three are surgeons and one an oculist. These medical stations have been carefully selected and contain operating tables, instruments of the most expensive and intricate kind, and all drugs that might be required. Many of the beds in use are curious, and offer testimony to the practical nature of the Germans. The number of wounded proved so much greater than had been anticipated that the ambulance men were compelled to make beds to the number of many thousands from the boxes and cases which had contained food for the troops.

Of the usual nature of the wounds of the German soldiers Professor Rossi says:—

Most of them are caused by cannon projectiles, whereas in preceding wars injuries were mainly due to rifle fire. Wounds in the head are numerous owing to the trench fighting, which is the chief characteristic of the campaign. Instances of "frozen feet" are not frequent, one reason being that the German soldiers wear very high boots. Amputation, practised so largely in previous wars, is now reserved by the Germans for desperate cases, so that at the end of the present war, vast and terrible though it is, mutilated men will not be very numerous.

At Brussels the party attended a conference of German medical men who discussed Belgian health problems.

HOW TO APPLY FOR A TEMPORARY COMMISSION IN THE R.A.M.C.

In reference to the appeal by Sir Alfred Keogh, published in THE LANCET of March 13th, there have been many complaints as to the difficulties of those unacquainted with official routine in taking the initial steps. If the candidate lives out of town he should apply by letter to the Secretary, War Office, Whitehall, S.W., when forms of application and conditions of service will be sent to him. It is not necessary to enclose a stamp. For those who live in London the process is simplicity itself and is graphically described by a correspondent in the *Times* of March 20th as follows:—

Go to an entrance of the War Office in Whitehall marked Enquiry Office. The policeman will direct him to a room, where he fills in a form stating the nature of his business; a clerk takes it, stamps it, and passes it on to another clerk who calls out applicant's name, gives the form to a boy messenger, and tells applicant to follow the boy. The applicant is taken to the office concerned; a courteous official hands the applicant two forms, one stating the conditions of service, the other a series of questions inquiring what are his qualifications, his age, his nationality, whether he has held any Government appointments, &c. This form he can fill in there and then or take it home and consider. The whole process did not take more than 20 minutes.

The writer in the *Times* deals, however, only with the process for obtaining the form of application. The form, when it arrives, is not explicit or very informatory.

WAR PREPARATIONS IN MANCHESTER.—The military authorities have commandeered seven of the largest and most modern municipal schools in Manchester. This will necessitate other provision for the accommodation of the 8000 dispossessed school children. These seven schools will accommodate 1015 wounded soldiers; in addition, one house in Stretford will accommodate 90 beds. In Salford five schools will be taken over by the military authorities. These preparations will entail a big demand on the nursing resources of the city, for considerably over 200 trained nurses will be required. Already nearly 100 trained nurses and probationers have been enrolled to begin work this week. Since October last 50 young women have been voluntarily rendering service in various military hospitals. Many beds are occupied by wounded soldiers in the Royal Infirmary. In Salford Royal Hospital there are 145 wounded soldiers, others are in Ancoats Hospital, the Eye Hospital in the city, and the military authorities are making inquiries as to the provision of further hospital accommodation for sick and wounded soldiers at Crumpsall Infirmary, where the authorities have resolved to place every facility in the hands of the War Office. The accommodation could possibly be extended from 250 to 600 cases. A further trouble will be to obtain the additional medical assistance and additional nurses required for the 600 soldiers who may eventually be taken at Crumpsall. Of course, all this is in addition to the beds already available in the Western Base Hospital and hospitals in towns around Manchester.

PROMPT CARE OF THE WOUNDED.—The testimony to the efficiency of the work of the R.A.M.C. is almost universal, but a concrete instance may perhaps help to bring it home more in detail. A lay contemporary relates that a soldier was wounded at Neuve Chapelle at 2.30 A.M. on March 13th on his way to the trenches. A shell exploded almost in his face and he was struck in the head. He lay an hour where he fell with "shrapnel flying over him all the time," picked himself up, and was assisted to the field dressing station at 3.45 A.M., whence he was taken by motor-ambulance to Estaires Hospital, arriving there at 8 A.M. After being attended to he went in another motor-ambulance to the hospital at Merville, leaving in a hospital train at 7 P.M., and arriving at Boulogne at 9 P.M. He was taken in the hospital boat at once, was asleep when it sailed, and arrived at Southampton next day at 2 P.M., London at 7 P.M., Waterloo at 9 P.M., and in his bed at the London Hospital at midnight, 45½ hours after he was wounded.

MORE WOUNDED SOLDIERS FOR DUBLIN.—A French hospital ship arrived in the Liffey from Boulogne on Friday, March 19th, carrying 390 wounded or sick soldiers. Five deaths had occurred on the voyage. The disembarkation of the soldiers was carried out with great expedition, the R.A.M.C. receiving useful help from the St. John Ambulance Brigade. Nearly all the wounded were "stretcher cases." Of the total number about 150 were brought to Dublin Castle, the remainder being distributed among the several city hospitals. Most of the men were wounded in the recent fighting near Neuve Chapelle, and their condition is more serious than that of any previous detachment of wounded which has arrived in Dublin.

SOLDIERS' AND SAILORS' HOSTELS.—We should like to see all the big railway companies at their termini in London, Liverpool, and other large cities following the lead set by the Great Eastern Railway, which has opened a soldiers' and sailors' hostel close to Liverpool Street Station. Sleeping accommodation is provided for about 50 and provision is made for washing, drying clothes, getting hot coffee, &c., for men on service who arrive early in the morning, or have some time to wait. While a small charge is usually made to those who can pay it, the conveniences are not forbidden to those who cannot.

THE UNIVERSITIES AND WAR.—Dr. Alexander Hill, Principal of University College, Southampton, at the prize distribution there on March 22nd, stated, on the basis of an investigation made by him, that the Universities and University Colleges of the British Empire contributed over 50 per cent. of the men on military or naval service. The German Universities, on the other hand, contributed less than 20 per cent.

THE "HOSPITAL OF FRIENDSHIP."—This is the name given by Lady Bagot to the first movable hospital in Belgium, organised by her a few weeks ago in response to the urgent appeal of Inspector-General Melis, the head of the military hospitals in Belgium, with the Belgian Minister as president and Lord Charles Beresford as chairman of committee. It is now serving within a short distance of the Belgian firing line, where it serves as a half-way house between the field and the base hospital. It is constructed of wooden panels assembled by iron bolts and screws, and can be taken down and packed within 12 hours and moved on by motor lorries. The ward of 24 beds is 70 feet long, with an operating-room, kitchen, store-room, &c. The staff consists of ten doctors chosen by the Order of St. John of Jerusalem, with dressers and orderlies. The cost of maintenance amounts to a little over £50 a week. The work of the hospital is highly appreciated by our Belgian friends, and quite justifies its title. Funds are desired to enable a second ward to be opened. A guarantee of £1000 would render this practicable and maintain its 24 beds for three months. The treasurer is Mrs. Robert Crawshay, 75, Upper Berkeley-street, Portman-square, and the bankers Messrs. Child and Co.

A FIELD BACTERIOLOGICAL LABORATORY.—A movable bacteriological laboratory on wheels has been presented through the Chancellor of the Exchequer to the Welsh Army Corps by Mrs. Lynn Thomas. The laboratory is well equipped, and is adequately ventilated and lighted, and its staff comprises a surgeon, an orderly trained to bacteriology, and a driver.

THE EDUCATION OF OFFICERS' SONS.—The council of the Imperial Service College appeal for money to enable them to educate the sons and descendants of the many officers of the army and navy who have been or shall be killed in the war leaving their families in straitened circumstances. The appeal is supported by Lord Kitchener, Sir John Jellicoe, and Sir John French, and cheques may be sent to Mr. A. W. Mayo-Robson, C.V.O., F.R.C.S., Lincoln House, Basil-street, Knightsbridge, S.W.

GRAYLINGWELL MENTAL HOSPITAL, CHICHESTER.—The West Sussex county council's asylum at Chichester, known as the Graylingwell Mental Hospital, is to be taken over by the War Office early in April for a military hospital with accommodation for 1000 wounded. The patients at present in the institution are being distributed as follows: Netherne, 137; Chartham (Kent), 103; Hellingly, 100; Fareham, 90; Haywards Heath, 80; Barming Heath, 70; Berkshire, 60; Portsmouth (female), 60; Isle of Wight, 50; and Canterbury, 25. Private patients will be removed to Hellingly, Haywards Heath, and Isle of Wight. Dr. H. A. Kidd, the medical superintendent, will be confirmed as chief administrator of the hospital with military rank, and the whole of the existing officers and staff will be retained. There will be a consulting staff of London physicians and surgeons, a visiting staff of surgeons and physicians in the county, in addition to a large resident staff, while the nursing staff will be increased to about 200. The War Office will pay the whole of the expenses connected with the adaptation of the hospital, also the expenses of the removal of the patients.

THE late Mr. Joseph Chamberlain's house, Highbury, at Birmingham, has been placed by Mr. Austen Chamberlain at the disposal of the military authorities for use as a hospital of 125 beds.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held recently the following candidates were successful:—

Surgery.—J. R. Crolius (Sections I. and II.), Edinburgh and London Hospital; S. C. Dyke (Sections I and II.), St. Mary's Hospital; L. A. J. Graham (Sections I. and II.), Cambridge and Guy's Hospital; R. A. Holmes (Sections I. and II.), Guy's Hospital; S. B. King (Sections I. and II.), St. Mary's Hospital; N. W. Rawlings (Section II.), Manchester; H. B. Taylor (Sections I. and II.), St. Mary's Hospital; and A. K. S. Wyborn (Sections I. and II.), Middlesex Hospital.

Medicine.—C. D. Banes (Sections I. and II.), King's College Hospital; A. U. L. Bennett (Sections I. and II.), Royal Free Hospital and Birmingham; S. C. Dyke (Sections I. and II.), St. Mary's Hospital; J. D. Ferguson (Sections I. and II.), Leeds; R. A. Holmes (Sections I. and II.), Guy's Hospital; S. B. King (Sections I. and II.), St. Mary's Hospital; H. B. Padwick (Sections I. and II.), Cambridge and London Hospital; R. Quesada-Jiménez (Sections I. and II.), Guy's Hospital; N. W. Rawlings (Section II.), Manchester; W. H. Rhys-Jones (Sections I. and II.), Charing Cross Hospital; and H. B. Taylor (Sections I. and II.), St. Mary's Hospital.

Forensic Medicine.—B. A. Bull, Oxford and St. Bartholomew's Hospital; J. E. Cheesman and S. C. Dyke, St. Mary's Hospital; J. L. Hamilton, London Hospital; S. B. King, St. Mary's Hospital; H. B. Padwick, Cambridge and London Hospital; R. Quesada-Jiménez, Guy's Hospital; W. H. Rhys-Jones, Charing Cross Hospital; and H. B. Taylor, St. Mary's Hospital.

Midwifery.—B. A. Bull, Oxford and St. Bartholomew's Hospital; and S. C. Dyke and H. B. Taylor, St. Mary's Hospital.

The Diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery:—J. R. Crolius, S. C. Dyke, R. A. Holmes, S. B. King, N. W. Rawlings, H. B. Taylor, and A. K. S. Wyborn.

UNIVERSITY OF SHEFFIELD.—The following candidates have passed the Second Examination for the degrees of M.B., Ch.B.:—

Annie Clark, William Collins, Ethel Mary Mathews, and Winifred Hannah Wells (with distinction in Anatomy and Physiology).

UNIVERSITY OF DURHAM (FACULTY OF MEDICINE).—At the second examination for the degree of Bachelor of Medicine the following candidates have passed in Anatomy and Physiology: Ewart Gordon Anderson (second-class honours), James Allan Berry (second-class honours), James Struthers Clark, Leonard Wilfrid Hearn, George Malayramon Kerry, William McDonald Pettigrew, and William Arthur Tweddle.

UNIVERSITY OF BRISTOL.—At the examination for the degree of M.D. Frederick Percival Mackie passed with honours.

CENTRAL MIDWIVES BOARD.—A meeting of the Central Midwives Board was held at Caxton House, Westminster, on March 11th, Sir Francis H. Champneys being in the chair. A letter was considered from the Clerk of the Council transmitting a copy of a letter from the Midwives Institute embodying a resolution passed by the council of the institute concerning the appointment by local bodies of unqualified and inexperienced women as inspectors of midwives, and inquiring whether the Board has any information justifying the implication conveyed by the resolution. The Board directed that the Clerk of the Council be informed that the Board has no evidence of the appointment on a large scale of improperly qualified women as inspectors

of midwives; one such case has recently come before it. The Board understands from one of its number that the resolution of the Midwives Institute referred to apprehensions in the future rather than to delinquencies in the past. With regard to the future, the Board thinks that it is highly advisable that persons who are appointed to supervise others should have received at least the amount of training possessed by those whom they supervise; otherwise their knowledge is almost sure to be insufficient to command the respect which their orders and advice ought to command. On the other hand, it is impossible to maintain that the mere possession of the Board's certificate guarantees all the qualities desirable in an inspector of midwives. A letter was considered from the medical officer of health of South Shields asking the opinion of the Board upon the position of a midwife who delivers a woman on the instructions and in the absence of a medical practitioner already engaged for the confinement. The Board decided that the reply be that they consider that as regards the relation of the doctor and midwife to the patient no harm is done if the patient clearly understands from the doctor that he will not attend the confinement if normal. If the doctor is engaged to attend the confinement whether normal or abnormal the midwife is acting as a monthly nurse; if she is engaged to attend the case she is acting as a midwife, and is bound by all the rules of the Board. A letter was considered from the county medical officer of health of Lancashire asking the opinion of the Board on his suggestion that it should be obligatory on a candidate for the Board's examination to take a course of three or four months' training in a hospital or in some other approved institution, and that she should not be permitted to receive the whole of her training under the supervision of a midwife who is not necessarily a trained nurse. The Board directed that the medical officer be informed that they have passed a resolution in favour of extending the period of training to six months.

ROYAL SOCIETY OF MEDICINE.—We are asked to state that the meeting of the Section of Pathology announced for March 30th will not be held.

MEETING OF THE BRITISH ASSOCIATION IN SEPTEMBER.—It has been resolved that Manchester will receive the British Association this year, but on account of the war the customary hospitality and entertainments—i.e., the social side—must be curtailed and restricted. The usual sectional meetings for scientific work and the public lectures will be carried through. The meeting will be held in the second week of September. The buildings of the University and those of the Municipal Technical School will be available for the meetings of the sections. The continuity of the meetings of the Association has been unbroken since the Association was founded in 1831.

APOTHECARIES' HALL OF IRELAND.—On St. Patrick's night, March 17th, the Governor, Dr. J. C. McWalter, entertained a large company to dinner in the Gresham Hotel, Dublin, when among the speakers was the new Provost of Trinity College, Dublin, Rev. J. P. Mahaffy, whose great-grandfather, John Pentland, was a member of the original corporation of the Apothecaries' Hall of Ireland.

SOUTH DEVON AND EAST CORNWALL HOSPITAL.—At the seventy-fifth annual meeting of subscribers to this hospital held recently, under the presidency of General A. P. Penton, the annual report stated that during 1914 the in-patients numbered 1711, the largest number on record; there were 2163 out-patients. The daily average number of occupied beds was 146. The financial statement showed an income of £8443, and a deficit balance of £2430 remaining against the institution. It was decided to allocate 50 beds for the sick and wounded soldiers, and the committee will accept contributions from the Government and also from the public in aid of this object.

LONDON DERMATOLOGICAL SOCIETY.—A meeting of the above society was held at St. John's Hospital on March 16th, Dr. W. Knowsley Sibley being in the chair. A series of clinical cases were shown by Dr. Morgan Dockrell, Dr. J. L. Bunch, Dr. Knowsley Sibley, and Dr. Simonds Gooding. Mr. A. T. Bremner (Leicester) read a paper entitled "The Importance of Detail in the Treatment of Diseases of the Skin," which resulted in an interesting discussion.

BOOKS, ETC., RECEIVED.

ARNOLD, EDWARD, London.
Chemistry of Colloids. By W. W. Taylor, M.A., D.Sc. Price 7s. 6d. net.

ASSURANCE MEDICAL SOCIETY, London.
Transactions of the Life Assurance Medical Officers' Association, London, 1912-1913.

BAILLIÈRE, J. B., ET FILS, Paris.
Précis de Pathologie Interne. Maladies de l'appareil Respiratoire et de l'appareil Circulatoire. Par les Drs. Loeper, Josué, Paisseau, et Paillard. Price Fr.14.
Déséquilibre du Ventre et Névropathies Consécutives. Traitement par les Agents Physiques. Par le Dr. A. Fraikin. Price 1.50 francs.

BAILLIERE, TINDALL, AND COX, London.
Mutter's Short Manual of Analytical Chemistry. Edited by J. Thomas, B.Sc. Lond. Tenth edition. Price 6s. net.
The Treatment, Prevention, and Cure of Tuberculosis and Lupus with Oleum Allii. By William C. Minchin, M.D. Dub. Second edition. Price 5s. net.
The Dispensary Treatment of Pulmonary Tuberculosis. By Hilda Clark, M.B., B.S. Lond. Price 15s. net.
Prescribers' Formulary and Index of Pharmacy adapted to the 1914 Pharmacopœia. By T. P. Beddoes, M.B., B.C. Camb., F.R.C.S. Eng. Second edition. Price 2s. 6d. net.

BALE, JOHN, SONS, AND DANIELSSON, LIMITED, London.
The Inevitable Complement: The Care and After-Care of Consumptives. By Harold Vallow, M.D. Price 1s. 6d. net.

BRITISH DENTAL ASSOCIATION, 19, Hanover-square, London.
Report on Odontomes by the Committee appointed by the British Dental Association. Price 7s. 6d. net.

BRITISH MUSEUM, South Kensington, S.W.
Guide to the Fossil Remains of Man. Price 4d.

BUTTERWORTH AND CO. AND SHAW AND SONS, London.
Archbold's Lunacy and Mental Deficiency. By James William Greig, of Lincoln's Inn, and William H. Gattie, of Gray's Inn. Fifth edition. Price 36s. net.

CHAPMAN AND HALL, LIMITED, London.
Words by the Wayside. By James Rhoades. Price 3s. 6d. net.

CHICAGO MEDICAL BOOK COMPANY, Chicago.
Glaucoma: A Symposium Presented at a meeting of the Chicago Ophthalmic Society, November, 1913. Edited by W. O. Nance, M.D., and W. H. Peck, M.D. Price 6s.

CHURCHILL, J. AND A., London.
The Vicious Circles in Neurasthenia and their Treatment. By Jamieson B. Hurry, M.A., M.D. Cantab. Price 3s. 6d. net.
Squire's Pocket Companion to the British Pharmacopœia. By Peter Wyatt Squire. Second edition. Price 10s. 6d. net.
Domestic Hygiene for Nurses. By Fred J. Smith, M.D., F.R.C.P. Second edition. Price 2s. 6d. net.

GRIFFIN, CHARLES, AND CO., London.
Transactions of the Medico-Legal Society, 1913-1914. Vol. XI. Edited by R. Henslowe Wellington.

HEINEMANN, WILLIAM, London.
Students' Text-book of Hygiene, By W. James Wilson, M.D., D.Sc., D.P.H. Price 8s. 6d. net.

KIMPTON, HENRY, London and Glasgow.
Text-book of Radiology. By Edward Reginald Morton, M.D., C.M. Trin. Tor., F.R.C.S. Edin., &c. Price 7s. 6d. net.

LAURIE, T. WERNER, London.
Thou art the Man: the Story of a Great Crime. By Sidney Dark. Price 1s. net.
Love Letters to a Soldier. By May Aldington. Price 1s. net.

LEWIS, H. K., London.
The Localisation of Bullets and Shell Fragments: a Record of Personal Experience. By F. Hernaman-Johnson, M.D. Price 1s. net.
Diagnostics and Treatment of Tropical Diseases. By E. R. Stitt, A.B., Ph.G., M.D., Medical Director, U.S. Navy. Price 8s. net.

J. B. LIPPINCOTT COMPANY, Philadelphia and London.
Mental Medicine and Nursing, for the Use of Training Schools for Nurses and in Medical Classes and a Ready Reference for the General Practitioner. By R. H. Chase, A.M., M.D. Price 6s. net.

LIVINGSTONE, E. AND S., Edinburgh.
Catechism Series:—
Botany, Part I., second edition, revised and enlarged. Price 1s. net.
Medicine, Part II., second edition, revised and enlarged. Price 1s. net.
Operative Surgery, Part II., first edition, with plates. Price 1s. net.
Husband's Students' Pocket Prescriber and Guide to Prescription Writing. By David Mitchell Macdonald, M.D. Fifth edition, revised according to the British Pharmacopœia, 1914. Price 1s. 6d. net.

MARLBOROUGH, E., AND CO., London.
Egyptian (Arabic) Self-Taught. By Captain C. A. Thimm. Fourth edition, revised and enlarged, by Major R. A. Marriott, D.S.O. Price 2s. 6d.

PITMAN, SIR ISAAC, AND SONS, London.
English Medical Women: Glimpses of their Work in Peace and War. By A. H. Bennett. With Preface by Stephen Paget, F.R.C.S. Price 3s. 6d.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.
List of the Fellows, Members, Extra-Licentiates, and Licentiates, 1915.

SMITH, ELDER, AND CO., London.
Paris Waits: 1914. By M. E. Clarke. Price 5s. net.

UNIVERSITY PRESS, Cambridge.
Sewage Purification and Disposal. By G. Bertram Kerkshaw, M.Inst.C.E. Price 12s. net.

WRIGHT, JOHN, AND SONS, Bristol.
Evolution and Disease. By J. T. C. Nash, Captain, R.A.M.C. (T.F.). Price 3s. 6d. net.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ECCLES, H. ANNESLEY, M.D. Lond., has been appointed Honorary Radiographer to the Croydon General Hospital.

GILES, J. D., M.D. Edin., has been appointed Medical Superintendent at the Salford Union Infirmary.

HAWKSHAW, M. J., L.R.C.P. & S. Irel., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Ballinrobe District of the county of Mayo.

JONES, D. T. G., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Llansawel District of the county of Carmarthen.

MILLER, ADA, M.D. Edin., has been appointed Lady Medical Officer and Lecturer in School Hygiene at the Moray House Training College by the Edinburgh Provincial Committee for the Training of Teachers.

STOWERS, J. H., M.D. Brux., L.R.C.P. Lond., M.R.C.S., has been appointed Honorary Consulting Dermatologist to the Foundling Hospital, London.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BARROW-IN-FURNESS, NORTH LONSDALE HOSPITAL.—House Surgeon. Salary £150 per annum, with residence, board, and laundry.

BIRKENHEAD BOROUGH HOSPITAL.—Senior House Surgeon. Salary £120 per annum, with board and laundry. Also Junior House Surgeon. Salary £100 per annum, with board and laundry.

BIRMINGHAM, CITY OF.—Female Assistant Medical Officer of Health. Salary £300 per annum.

BIRMINGHAM, CITY MENTAL HOSPITAL, Winson Green.—Assistant Medical Officer. Salary £250 per annum, with apartments, board, laundry, &c.

BIRMINGHAM GENERAL DISPENSARY.—Resident Medical Officer, unmarried. Salary £250 per annum, with apartments, attendance, &c.

BOOTLE BOROUGH HOSPITAL.—Senior and Junior House Surgeons. Salary £150 and £130 per annum respectively, with residence, board, and laundry.

BOURNEMOUTH, ROYAL VICTORIA AND WEST HANTS HOSPITAL.—Three House Surgeons for six months. Salary £100 per annum, with board, lodging, and washing.

BRADFORD CHILDREN'S HOSPITAL.—House Surgeon. Salary £120 per annum, with board, residence, and laundry.

BRADFORD EDUCATION COMMITTEE.—Assistant School Medical Officer. Salary £350 per annum.

BRADFORD POOR-LAW UNION, ST. LUKE'S HOSPITAL AND UNION HOUSE.—Assistant Resident Medical Officer, unmarried. Salary £200 per annum, with rations, apartments, and washing.

BRECONSHIRE COUNTY COUNCIL.—Temporary Assistant School Medical Officer. Salary at rate of £300 per annum.

BRISTOL GENERAL HOSPITAL.—First House Physician, Second House Physician, House Surgeon, and Casualty House Surgeon, also Resident Obstetric Officer, for six months. Salary at rate of £150 per annum, with board, residence, &c.

BRISTOL ROYAL INFIRMARY.—Three House Surgeons, Two House Physicians, and One Obstetric and Ophthalmic House Surgeon. Salary at rate of £120 per annum, with board, apartments, and laundry.

BURNLEY, VICTORIA HOSPITAL.—House Surgeon. Salary £135 per annum, with residence, board, and washing.

BURY INFIRMARY.—Junior House Surgeon. Salary £150 per annum, with board, residence, and washing.

CANTERBURY, KENT COUNTY ASYLUM, Chartham.—Third Junior Assistant Medical Officer. Salary £250 per annum, with quarters, board, washing, &c.

CANTERBURY MENTAL HOSPITAL.—Assistant Medical Officer, unmarried. Salary £250 per annum, with board, lodging, washing, and attendance.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—Second House Surgeon. Salary £150 per annum, with board, apartments, and laundry.

CROYDON BOROUGH HOSPITAL.—Assistant Resident Medical Officer. Salary £150 per annum, with board, residence and laundry.

CROYDON UNION.—Assistant Medical Superintendent of Infirmary and Assistant Medical Officer of Workhouse and Childrens' Homes. Salary £225 per annum, with usual residential allowances.

DERBY, DERBYSHIRE HOSPITAL FOR SICK CHILDREN.—Female Resident Medical Officer for six months. Salary £200 per annum.

DUDLEY, GUEST HOSPITAL.—Senior Resident Medical Officer. Also Assistant House Surgeon for six months. Salary £150 and £120 per annum respectively, with board, residence, attendance, and washing.

DUMFRIES, CRICHTON ROYAL.—Temporary Assistant Physician. Salary at rate of 5 guineas a week, with apartments, board, laundry, and attendance.

ECCLES AND PATRICROFT HOSPITAL.—House Surgeon, unmarried. Salary £70 per annum, with board, residence, and laundry.

EDINBURGH, ROYAL EDINBURGH ASYLUM, Morningside.—Assistant Medical Officer. Salary £175 per annum, with board, rooms, &c.

GLASGOW, CORPORATION OF THE CITY OF.—Assistant Tuberculosis Officer. Salary at rate of £350 per annum.

GRANGE-OVER-SANDS, WESTMORLAND CONSUMPTION SANATORIUM AND HOME, Meathop.—Second Assistant to Medical Superintendent. Salary £200 per annum, with board and laundry.

HALIFAX ROYAL INFIRMARY.—Second and Third House Surgeons, unmarried. Salary £120 and £100 per annum respectively, with residence, board, and washing.

HAMPSHIRE COUNTY COUNCIL.—Assistant County Medical Officer of Health. Salary £300.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—House Physician, unmarried, for six months. Salary £30, with board, residence, &c.

HOSPITAL FOR WOMEN, Soho-square, W.—Resident Medical Officer for six months. Salary at rate of £80 per annum.

HULL, VICTORIA CHILDREN'S HOSPITAL, Park-street.—Resident House Surgeon and Resident Assistant House Surgeon. Salary £60 and £50 per annum respectively, with board and laundry. Also Resident House Surgeon. Salary £100 per annum, with board and laundry.

KENSINGTON DISPENSARY AND CHILDREN'S HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with board, apartments, and washing.

KENT COUNTY COUNCIL.—Tuberculosis Officer. Salary at rate of £500 per annum.

LANCASHIRE COUNTY COUNCIL, ELSWICK SANATORIUM, near Kirkham.—Medical Superintendent. Salary £300 per annum, with board, apartments, and washing.

LEEDS GENERAL INFIRMARY.—Ophthalmic House Surgeon for six months. Salary £50 per annum, with board, residence, and laundry. Also Resident Medical Officer for six months at Ida and Robert Arthington Hospitals. Salary £60 per annum, with board, residence, and laundry.

LIVERPOOL, ROYAL SOUTHERN HOSPITAL.—Two House Surgeons and One House Physician, each for six months. Salary at rate of £60 per annum, with board and residence.

LONDON LOCK HOSPITAL, Harrow-road, W.—House Surgeon for six months. Salary at rate of £130 per annum, with rooms, full board, and washing.

MAIDSTONE, KENT COUNTY ASYLUM.—Assistant Medical Officer, unmarried. Salary £250 per annum, with board, quarters, attendance, washing, &c.

MANCHESTER, ANCOATS HOSPITAL, Mill-street.—House Physician. Salary £80 per annum, with board and residence.

MANCHESTER CHILDREN'S HOSPITAL, Gartside-street.—Assistant Medical Officer for Out-patient Department for six months. Salary £100 per annum.

MANCHESTER CHILDREN'S HOSPITAL, Pendlebury.—Resident Medical Officer, unmarried, for six months. Salary at rate of £100 per annum.

MANCHESTER, COUNTY ASYLUM, Prestwich.—Assistant Medical Officer, unmarried. Salary £250 per annum, with board, apartments, attendance, and washing.

MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASES OF THE THROAT AND CHEST.—Assistant Medical Officer and Pathologist. Salary £60 per annum.

MANCHESTER, HULME DISPENSARY, Dale-street, Stretford-road.—House Surgeon. Salary £250 per annum, with apartments, attendance, coal, and gas.

MERSTHAM, SURREY COUNTY ASYLUM, Netherne.—Temporary Assistant Medical Officer. Salary £6 6s. per week, with apartments, board, attendance, and laundry.

MIDDLESBROUGH, NORTH ORMESBY HOSPITAL.—House Surgeon. Salary £150 per annum, with board, washing, and attendance.

MIDDLESEX HOSPITAL, W.—Two House Physicians. Board and residence provided.

MILE END OLD TOWN INFIRMARY.—Two Assistant Medical Officers. Salary £275 per annum, with board, lodging, and washing.

MILLER GENERAL HOSPITAL FOR SOUTH-EAST LONDON, Greenwich-road, S.E.—Senior House Surgeon for six months. Salary £100 per annum, with board, residence, and laundry.

NETLEY, WELSH HOSPITAL.—Two Medical Officers for six months. Salary at rate of £400 per annum.

NEWCASTLE-UPON-TYNE, POOR-LAW INSTITUTION AND INFIRMARY, Westgate-road.—Assistant Resident Medical Officer, unmarried. Salary at rate of £250 per annum, with apartments, rations, and washing.

NEWPORT (MON.), ROYAL GWENT HOSPITAL.—Resident Medical Officer. Salary for first six months at rate of £100 per annum, second six months £125, and third six months £150, with board, residence, and laundry.

NORTHAMPTON COUNTY BOROUGH EDUCATION COMMITTEE.—Dental Surgeon. Salary £250 per annum.

NORWICH, CITY OF.—Assistant School Medical Officer. Salary £30 per month.

PADDINGTON GREEN CHILDREN'S HOSPITAL.—Female House Physician for six months. Salary at rate of £80 per annum, with board, residence, and washing.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—House Physician and House Surgeon for six months. Salary £100 per annum, with board, residence, and washing.

ROTHERHAM COUNTY BOROUGH.—Tuberculosis Officer and Assistant School Medical Officer. Salary £350 per annum, with board and residence at Kimberworth Tuberculosis Hospital, Rotherham.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, E.C.—House Physician for six months. Salary at rate of £75 per annum, with board, lodging, and washing. Also Tuberculosis Officer. Salary £420 per annum.

ROYAL NATIONAL ORTHOPÆDIC HOSPITAL, 234, Great Portland-street, W.—Resident House Surgeon. Salary £100 per annum, all found.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN, S.E.—Senior and Junior Resident Medical Officers. Salary at rate of £150 and £100 per annum respectively, with board and washing.

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.—Junior Resident Medical Officer for three months. Salary at rate of £90 per annum, with board, residence, and laundry.

ST. MARY ISLINGTON INFIRMARY, Highgate Hill, N.—Junior Assistant Medical Officer. Salary at rate of £140 per annum, and all found.

SALFORD ROYAL HOSPITAL.—Junior House Surgeon and Casualty House Surgeon for six months. Salary at rate of £100 per annum each, with board and residence.

SALISBURY GENERAL INFIRMARY.—House Surgeon and Assistant House Surgeon, unmarried. Salary £100 and £75 per annum respectively, with apartments, board, lodging, and washing.

SERBIA FEVER HOSPITAL.—Head Physician.
SHEFFIELD ROYAL HOSPITAL.—Assistant House Surgeon and Assistant House Physician.
SHEFFIELD ROYAL INFIRMARY.—House Surgeon and Assistant House Physician. Salary £100 per annum, with board and residence.
SHEFFIELD UNIVERSITY.—Joseph Hunter Chair of Pathology.
SHREWSBURY, ROYAL SALOP INFIRMARY.—House Physician. Salary at rate of £110 per annum, with board and apartments.
SOUTH OF FRANCE RED CROSS HOSPITAL.—Surgeon for six months. Pay 25s. a day less 3s. 2d. for messing and apartments; £10 allowance for uniform.
SOUTH SHIELDS, INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Junior House Surgeon. Salary £115 per annum, with residence, board, and washing.
TAUNTON AND SOMERSET HOSPITAL, Taunton.—Senior House Surgeon. Salary £120 per annum, with board, lodging, and laundry.
UNIVERSITY OF LONDON.—University Chair of Physiology at St. Bartholomew's Hospital Medical School. Salary £600 per annum.
VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—House Physician and House Surgeon for six months. Salary £100 each, with board and lodging.
WAKEFIELD, CLAYTON HOSPITAL.—Female Junior House Surgeon. Salary £120 per annum, all found.
WARRINGTON INFIRMARY AND DISPENSARY.—Junior House Surgeon. Salary at rate of £120 per annum, with board, apartments, and laundry.
WEST END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, PARALYSIS, AND EPILEPSY, 73, Welbeck-street, W.—Honorary Registrar.
WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford, E.—Junior House Surgeon. Salary at rate of £100 per annum, with board, residence, and washing.
WEST HAM UNION.—Deputy Medical Officer at Sick Home, 95, Forest-lane, Forest Gate, E. Salary £250 per annum, with usual residential allowances. Also Female Assistant Medical Officer at Workhouse, Union-road, Leytonstone, N.E. Salary £140 per annum, with usual residential allowances.
WEST RIDING OF YORKSHIRE.—Temporary Dispensary Tuberculosis Officer. Salary £400 per annum.
WESTON-SUPER-MARE HOSPITAL.—House Surgeon. Salary £120 per annum, with board, residence, and laundry.
WHITEHAVEN AND WEST CUMBERLAND INFIRMARY.—House Surgeon. Salary £150 per annum, with board, lodging, and attendance.
WILLESDEN URBAN DISTRICT COUNCIL, HEALTH DEPARTMENT.—Temporary Assistant Medical Officer of Health and Temporary Assistant School Medical Officer. Salary £3 8s. per week. Also Temporary Resident Medical Officer at Infectious Diseases Hospital. Salary £6 6s. per week, with board and lodging.
WOOLWICH INFIRMARY, Plumstead.—Resident Assistant Medical Officer, unmarried. Salary £180 per annum, with apartments, rations, and washing.
WORCESTERSHIRE COUNTY COUNCIL EDUCATION COMMITTEE.—Assistant School Medical Officer. Salary £350 per annum. Also Assistant Tuberculosis Officer. Salary £350 per annum.

THE Secretary of State for the Home Department gives notice of a vacancy for a Medical Referee under the Workmen's Compensation Act, 1906, for County Court Circuit No. 47, attached more particularly to the Greenwich and Woolwich County Courts.
THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Acts at Dripsey, in the county of Cork; and at Staplehurst, in the county of Kent.

Births, Marriages, and Deaths.

BIRTHS.

REICHWALD.—On March 14th, at Timber Hill, Ashtead, Surrey, the wife of M. B. Reichwald, M.B., B.S., of a daughter.
ROSE.—On March 15th, at St. Mary's, Liphook, the wife of Captain A. M. Rose, Royal Army Medical Corps, of a daughter.
SMITH.—On March 16th, at St. Mary's-road, Doncaster, the wife of H. Gordon Smith, M.B., B.S. Lond., D.P.H., of a son.

MARRIAGES.

BOWES—GRAHAM.—On March 6th, at All Souls', Langham-place, W., Richard F. B. Bowes, B.A. Oxon., M.R.C.S., L.R.C.P., to Minnie Johnson Graham, daughter of the late David Graham and Mrs. Graham, of Aspatria, Cumberland.
HOLMES—MASSEY.—On March 22nd, at St. Stephen's, Avenue-road, Regent's Park, London, Thomas Sydney Shaw Holmes, M.B., M.Ch., F.R.C.S. Eng., to Kathleen Louise, youngest daughter of Edmonds Massey, Yew Cottage, Hoddesdon, Herts.

DEATHS.

ALEXANDER.—On March 18th, at Maycroft, Wavertree, Liverpool, David Moore Alexander, M.D., aged 37 years.
DICKINSON.—On March 19th, at Clifton, Wm. G. Dickinson, M.D., late of West Hill, Putney, aged 61 years.
HALL.—On March 14th, at the Military Hospital, Lichfield, Lieutenant H. S. Hall, R.A.M.C., aged 35 years.
HILL.—On March 17th, at Churchfields, Old Basford, Nottingham, William Henry Hill, M.B., C.M. Edin., aged 52 years.
THELWELL.—On March 14th, at Narborough, Leicestershire, Fred. W.W. Thelwell, L.S.A. Lond.
THYNE.—On March 23rd, at 1, Hamilton-mansions, Hove, Thomas Thyne, M.D., F.R.C.S., aged 75 years, late of High Barnet.
WILSON.—On March 24th, at 282, Goldhawk-road, London, Aurora Kate, beloved wife of James Wilson, M.D.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

IMPERIAL BUREAU OF ENTOMOLOGY.

THE Earl of Cromer, who was the first chairman of the managing committee of this Bureau, resigned the position recently owing to ill-health, and was succeeded by the Right Hon. Austen Chamberlain, M.P., who has prepared the report for the year 1914 which has just been presented to Parliament. In the course of it Mr. Chamberlain writes:—

"The Bureau has now been established for two years, and I am glad to be able to record the emphatic opinion of the committee that it has more than justified its existence. From many quarters the director (Mr. G. A. K. Marshall) has received appreciation of its work, and there is no reason to doubt that if the necessary funds for its maintenance are obtained it will continue to be of real assistance not only to the Dominion and Colonial Governments, but also to foreign Governments which are closely interested in entomological problems..... The publications of the Bureau have been continued. Every month the *Review of Applied Entomology* is published in two parts, one dealing with agricultural entomology, and the other with medical and veterinary entomology. ..... The other regular publication of the Bureau is the *Bulletin of Entomological Research*. This is issued quarterly and contains original illustrated articles. Among the most important published during the year may be mentioned contributions dealing with the bionomics of tsetse-flies by Messrs. R. W. Jack, Ll. Lloyd, R. B. Woosman, and Dr. J. O. Shircove; Dr. R. Roper's paper on the malaria-carrying mosquitoes of British North Borneo; an account of the blood-sucking insects observed by Dr. J. J. Simpson on the Gold Coast; and papers on the agricultural insect pests of Southern Nigeria by Dr. W. A. S. Lamborn and of Nyasaland by Mr. E. Ballard. ..... Two travelling entomologists have been employed in Africa as hitherto, although a period of some six months elapsed between the departure of Mr. S. A. Neave from Nyasaland to take up his duties as assistant director of the Bureau, and the appointment of Dr. W. A. S. Lamborn to succeed him as travelling entomologist in East Africa. Mr. Neave had been stationed at Mlanje for the purpose of studying the life-histories of the blood-sucking flies of the family Tabanidæ, many of which undoubtedly play an important rôle in the dissemination of various diseases of domestic animals; and to enable him to carry out his researches a laboratory was built for him by the Government of Nyasaland at his headquarters. He has succeeded in discovering the breeding habits of no less than 20 different species concerning which nothing was known previously. It was at first intended that Dr. Lamborn should proceed to the East Africa and Uganda Protectorates, but on reconsideration the committee felt that his services would be more valuable for the time being in Nyasaland. Accordingly he is now working in that Protectorate, his general objects being to test, by experiment on a fairly large scale, the practicability of eradicating glossina within a given area by direct attacks upon the flies themselves, and concurrently with this experiment to test the actual effects on the fly of clearing undergrowth in order to ascertain whether the clearing really kills the flies or merely drives them elsewhere. It is anticipated that this experiment in destruction of glossina must extend over at least one year if definite information is to be obtained as to the likelihood of catching and trapping operations proving really effective in controlling the numbers of the fly. On the West Coast Dr. J. J. Simpson has been employed on special investigations connected with the glossina problem in the Northern Territories of the Gold Coast. A full account of his previous work in the Gold Coast has appeared in Vol. V. of the *Bulletin of Entomological Research*, and it was hoped that he would have been able to collect some equally useful information in the Northern Territories, but I regret to report that when he had only half completed his tour he was invalided home, and he is now recuperating in this country. Arrangements have also been made for Mr. W. F. Fiske, who had spent a year in Uganda working for the Royal Society, to carry out investigations for the Bureau in that Protectorate. He is at present living on the Sesse Islands in Victoria Nyanza. ..... The importance of the glossina investigations cannot easily be overrated, as, indeed, appears in the Report of the Sleeping Sickness Committee which the Secretary of State for the Colonies appointed to examine the question of the relation between trypanosomiasis and wild animals."

After referring in detail to the operations of the Bureau in other directions, and regretting that comparatively little progress has been made with the stegomyia survey in the

Far East, Mr. Chamberlain states that excellent results have been obtained with the Carnegie studentships, which are generously provided by Mr. Andrew Carnegie for the purpose of enabling young men selected in this country to have an opportunity of studying the American methods of dealing with noxious insects. The conference of the official entomologists of the Empire which it was proposed to hold in July next with the object of discussing various questions which closely concern the interests of the different parts of the Empire, has, owing to the war, been postponed indefinitely, but the committee trust that when circumstances permit the project will be revived.

INVALID CHILDREN'S AID ASSOCIATION.

THE annual meeting of the Invalid Children's Aid Association will be held, by permission of Mr. and Mrs. George Coats, at 11, Hill-street, Berkeley-square, London, W., on Wednesday afternoon, April 28th, at 3 o'clock. Field-Marshal Lord Grenfell will preside, and Bishop Boyd Carpenter, Lady Jellicoe, Countess Ferrers, Dr. A. J. Jex-Blake, and Captain F. Grenfell, V.C., will be among the speakers. Admission will be by ticket only, applications for which may be made to the secretary, 69, Denison House, 296, Vauxhall Bridge-road, Westminster, S.W.

CENTIGRADE AND FAHRENHEIT.

To the Editor of THE LANCET.

SIR,—An equally simple method of conversion and applicable both ways is the following:—

$$C = \frac{(F - 32) \times 5}{9} \qquad F = \frac{C \times 9}{5} + 32.$$

I am, Sir, yours faithfully,

March 17th, 1915. PENROSE WILLIAMS.

THE MEDICAL PICKWICK.

THE first two numbers have appeared of an American monthly medical journal which has little to do with the serious side of medicine, but is concerned rather with the lighter aspect of the work of the doctor, the humour of the profession, its anecdotes, and its biography. We may mention a few of the articles which the numbers we have received contain. There is a study of "Moncrief's Receipts," which was published nearly 200 years ago; there is an appreciation of the veteran Dr. Abraham Jacobi; a chapter on a collection of anecdotes of Dr. John Radcliffe; and a report of "The Pickwick Medical Society," a very fair cut at only too many medical meetings; and mingled with these are many medical jokes and anecdotes, some new and sparkling, and some of a hoary antiquity that makes the reader almost regret that they have been disturbed from their well-earned rest, though of course there are always younger members of the profession to whom they may be new. We would like to mention specially an article by Dr. Frank Place on the inaccuracy of medical bibliographical references; all who have had to look up references given in papers or books will know the difficulties encountered, and this article recounts the immense trouble met with in endeavouring to find the original papers in which certain statements were made; the article is entitled "Bibliographical Bones"; etymologists may be interested to learn that in this connexion a "bone" means a mistake.

Many authors have "dropped into poetry." It may be asked, "Why Pickwick?" It is true that the word Pickwick occurs here and there, and the well-known phrase "In a Pickwickian sense" is to be found several times; but there is no attempt to bring out any of the medical aspects of Mr. Pickwick's remarkable memoirs. So far as our memory serves us, Mr. Pickwick himself nowhere expresses any opinion on a medical subject, and his stormy interview with Dr. Payne and Dr. Slammer at the Bull at Rochester and his adventures with Bob Sawyer and Benjamin Allen are his closest relations with our profession that have been recorded. But the title is quite sound if the contributors in future issues live up to it, for the sidelights on early Victorian medicine shed by Dickens in his first great book are illuminating.

MAP OF OPERATIONS IN THE NEAR EAST.

Stanford's atlas maps of the Dardanelles and the Troad and of the Bosphorus and Constantinople are of interest at the present juncture and render intelligible the Admiralty reports of operations. The two maps are on one sheet, 30 in. × 22 in., the former on the scale of 3 miles (1 : 190,080), the latter 1½ miles (1 : 95,040), to an inch. The hill features are clearly delineated, the heights being given in feet; the roads are shown, as well as the principal ruins, fountains and wells, lighthouses, lightships, anchorages, rocks, fathom lines, and direction of currents, and the forts are marked in red with the reference letters used in the British Admiralty's reports. The maps, price, coloured sheet, 3*s.* (post free 3*s.* 5*d.*), or mounted to fold in case 5*s.* (post free 5*s.* 3*d.*), may be had from Edward Stanford, Limited, Long Acre, London, W.C.

A REMARKABLE BIRTHDAY COINCIDENCE.

To the Editor of THE LANCET.

SIR,—I think it must be an extremely rare event for three members of one family to be born on the same day of the year. On St. Patrick's Day, 1909, I delivered Mrs. B. of a son; on the same day, 1913, I again delivered her of a son; and on Wednesday last I was once more in attendance upon her, when "Patrick the third" began his earthly pilgrimage.

I think this triple coincidence in one family is worth recording. I am, Sir, yours faithfully,

WM. BOURNE HALLOWES, L.R.C.P. & S. Irel.

Newark, Notts, March 20th, 1915.

THE TECHNIQUE OF EFFECTIVE BROMIDE THERAPY IN EPILEPSY.

WE have received from the Hoffmann-La Roche Chemical Works, Limited, of Idol-lane, London, E.C., a reprint of a paper under the above heading which was read by Dr. A. Ulrich before the Medical Society of the Canton of Zürich. He institutes a salt-poor diet and exhibits "sedobrol" in epilepsy. As was pointed out in our analytical columns of July 4th, 1914, sedobrol is a combination of sodium bromide with an appetising bouillon basis. Bromide is thus given in the form of a dietetic, the patient being unaware of the presence of the drug. A free dilution of the bromide is ensured, and the physician is able to give bromide while gradually withdrawing the daily intake of sodium chloride, which can be done without rendering the diet vapid. Sodium bromide possesses a salinity similar to that of common salt.

THE MEDICAL ENTERPRISE SOCIETY, LIMITED.

WE are desired to request any members of the Medical Defence Union who are shareholders or have placed accounts for collection in the hands of "The Medical Enterprise Society, Limited," of 25, Palace Chambers, 9, Bridge-street, Westminster, S.W., to communicate with Messrs. Hempson, of 33, Henrietta-street, Strand, W.C., the solicitors to the Union.

WOMEN POLICE FOR BRIGHTON.

BETWEEN 40 and 50 enthusiastic members of the Brighton and Hove branch of the National Union of Women Workers have formed a corps of women police at Brighton and have been officially recognised. They have commenced active work, and it is considered, with so many soldiers always billeted in the town, and the number of girls ready and willing to talk to strange soldiers, sometimes regardless of consequences, that the women patrols will find many opportunities of doing useful work.

ELECTRO-MEDICAL APPARATUS.

WE have received from the General Electric Company, Limited, of Queen Victoria-street, London, E.C., a copy of their latest list of electro-medical appliances. These include apparatus for electrolysis, epilation, &c., cautery apparatus, medical and dental lamps (laryngeal, ophthalmic), massage outfits, and so forth. A good deal of care appears to have been taken to make these useful appliances convenient, suitable, and economical for the various purposes indicated.

A HOME OF REST AT NOMINAL COST.

"R. F. P.," 41, Hallam-street, London, W., writes to ask if any reader knows of a home of rest for a lady, the daughter of a deceased medical man; she is incapacitated from work, having undergone an operation for radical cure of hernia, phlebitis developing, leaving a chronic swelling of the legs which will for a very long time, if not permanently, incapacitate her from earning her living.

INSTITUTION WANTED FOR A CRIPPLED GIRL.

"W. W. L." (Swansea) writes that he is interested in a little girl, 10 years of age, who from birth has been a cripple. She cannot use or control her legs, but is normal in every other way. He asks for the address of some institution where she would be both educated and medically treated, stating that the girl's parents do not know how to deal with her, while they are anxious to do the best for her future. The child's maternal uncle is prepared to meet the expense.

ANTISEPTIC PREMIER PASTE.

THIS adhesive paste has been given a considerable trial in our offices, and we can speak favourably of it. It forms a very useful medium for photographic mounts and for all departments of labelling. It is clean, soft, and sticky, and goes further than many similar pastes owing to its uniformity of composition, for there are no lumps, the starch being thoroughly gelatinised. The whole is kept sweet and free from moulds by the addition of an antiseptic essential oil. It is supplied by the British Manufacturing Company, of Beechcroft-road, Leytonstone, London, N.E.

Mr. Robert J. Hillier, M.R.C.S. (Sheffield), asks whether there is any home for feeble-minded children where a girl of a little over 2 years can be received. She has some paralysis and also occasional epileptiform attacks. She has been under observation for a week in the Children's Hospital, Sheffield, but it is not considered possible to operate. The parents cannot afford to pay.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

SECTION OF PATHOLOGY.—The meeting of this Section announced for March 30th will not be held.

NORTH-EAST LONDON CLINICAL SOCIETY, Prince of Wales's Hospital, Tottenham, N.

THURSDAY.—4.15 P.M., Discussion on the Value of Tuberculin Treatment (opened by Dr. R. M. Leslie (Medical) and Mr. E. Gillespie (Surgical).

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.

MONDAY AND WEDNESDAY.—5 P.M., Arris and Gale Lectures:—Dr. D. Waterston: Further Recent Investigations in the Development of the Human Body.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Dr. Pritchard: Bacterial Therapy Department. Mr. B. Harman and Mr. Gibb: Diseases of the Eye.
TUESDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.
WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations. Dr. Simson: Diseases of Women. Mr. Gibb: Diseases of the Eye.
THURSDAY.—9 A.M., Dr. Bernstein: Bacterial Therapy Department. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Mr. B. Harman: Diseases of the Eye.

THE THROAT HOSPITAL, Golden-square, W.

MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.
THURSDAY.—5.15 P.M., Clinical Lecture.

MANCHESTER HOSPITALS POST-GRADUATE CLINICS.

THURSDAY.—ANCOATS HOSPITAL, Mill-street.—4.30 P.M., Medical and Surgical Cases.

For further particulars of the above Lectures, &c., see Advertisement Pages.

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It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, March 24th, 1915.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Mar. 18	29·53	N.	0·05	45	44	43	42	43	Overcast
,, 19	29·53	N.	...	81	41	33	32	33	Overcast
,, 20	29·95	N.W.	...	82	47	31	32	35	Cloudy
,, 21	30·13	W.	...	87	54	35	37	42	Cloudy
,, 22	30·04	N.E.	0·13	70	51	35	39	41	Fine
,, 23	29·82	S.W.	0·06	72	58	41	49	50	Hazy
,, 24	29·91	S.	...	78	57	50	50	51	Overcast

The following magazines, journals, &c., have been received:—
British Dental Journal, Annals of Tropical Medicine and Parasitology, American Journal of Obstetrics, Clinical Medicine, London Hospital Gazette, Annali di Medicina Navale e Coloniale, Cleveland Medical Journal, Archives of Diagnosis, St. Thomas's Hospital Gazette, St. Paul's Medical Journal, Indian Medical Record, Revista de la Sociedad Médica Argentina, Review of Neurology and Psychiatry.

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